



**CONESTOGA-ROVERS  
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US EPA RECORDS CENTER REGION 5



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September 29, 2011

Reference No. 038443-89

Ms. Karen Cibulskis  
Remedial Project Manager  
United States Environmental Protection Agency  
Region V  
77 West Jackson Boulevard  
Mail Code SR-6J  
Chicago, IL 60604

Dear Ms. Cibulskis:

Re: Outstanding USEPA Comments on the Revised Streamlined Remedial Investigation/  
Feasibility Study Report for Operable Unit 1 (OU1 RI/FS Report)  
South Dayton Dump and Landfill Site, Moraine, Ohio (Site)

This letter presents responses to USEPA's August 8, 2011 outstanding comments on the OU1 RI/FS Report. Conestoga-Rovers & Associates (CRA) has prepared this letter on behalf of the Respondents to the Administrative Settlement Agreement and Order on Consent (ASAOC) for Remedial Investigation/Feasibility Study (RI/FS) of the Site, Docket No. V-W-06-C-852 (Respondents).

For ease of reference, USEPA's comments are presented below in italics followed by CRA's response. USEPA Comment numbers are carried over from USEPA's May 10, 2011 "Comments on Revised Streamlined Remedial Investigation/Feasibility Study Report, Operable Unit 1".

**USEPA Comment No. 1**

*Comment was not addressed as directed. For the comment reference to implications regarding the remedial design, CRA referenced text in Section 1.2.3: "Any water in the Large and Small Ponds would be pumped immediately prior to cap construction. As both the Large and Small Ponds are shallow, and typically dry during summer months, substantial quantities of water would not be expected. Fill meeting the appropriate criteria would be used to backfill the Large and Small Ponds to a consistent grade to facilitate cap construction. Any water pumped from the Large and Small Ponds would be tested prior to disposal." This statement conflicts with EPA's requested revision that the large pond is mostly wet but occasionally dry.*

REGISTERED COMPANY FOR  
**ISO 9001**  
CERTIFICATION DESIGN



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

2

Reference No. 038443-89

*July 2010 Comment 2. Modifications acceptable – as long as implications of ponded water and/or leachate in these areas which are within the MSW-capped area are addressed later in FS, including specifics.*

(ORIGINAL COMMENT) Page 1, Section 1.0, Introduction, Paragraph 2, Line 3.

*During CRA's monthly monitoring that started in July, 2008, the Large Pond had water in it in August, September and December 2008; April 2009; and in all months from June 2009 to April 2010. This is not exactly a "vernal" (spring) pond. Also, the Small Pond had water in it in August, 2008, April and June 2009, and in January, February and March 2010. Again, while intermittent, the Small Pond is not "vernal".*

*CRA's RI (page 104) states that the Large and Small Ponds are fed by groundwater and rise and fall with groundwater levels. This is consistent with flow maps, which indicate there is a difference of less than 0.5 feet between the water elevation in the Large Pond and the water levels in the 2 nearest wells located 200 and 300 feet from the Large Pond; and a little more than 0.5 feet between water level in the Small Pond and the water level in the nearest well located about 100 feet from the Small Pond. Since the Large and Small Ponds are in direct communication with the water table, this may have implications for the remedial design (e.g., underground drains).*

*Please change these lines as follows: "...15-acre Quarry Pond, ~~and two small ponds~~ a small intermittent pond, and a larger, 1-acre pond that is mostly wet but occasionally dry."*

**Response**

As noted in the OU1 RI/FS Report, the Small Pond is typically dry for several months of the year. While the Large Pond contains standing water for longer periods, the volume of water is generally very low during the summer and early autumn months and the Large Pond has been completely dry for at least a portion of each year since monitoring began. As a practical measure, filling of the Small and Large Ponds should be timed to coincide with the driest months of the year to minimize the volume of potentially contaminated water that must be removed and disposed of.

The small editorial change this comment directs can be made easily.

**USEPA Comment No. 6**

*Comment was not addressed as requested, revision is acceptable. However, page 4, paragraph 2, line 10, needs to be revised to "...which were to be addressed in the final RI report (now renamed the OU-2 Planning Support Document)*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

3

Reference No. 038443-89

(ORIGINAL COMMENT) Section 1.0, Introduction, Page 3, Paragraph 3, Lines 15 and 16, continuing onto Page 4: Some of this information is not correct, please delete the sentence "The results of the Phase 1 Groundwater Investigation, completed in accordance with the Final Groundwater Letter Work Plan..." from the OU1 RI/FS and replace with the following text:

*"The Respondents submitted the Phase I Groundwater Report, which included a Phase 2 Groundwater Work Plan, in March, 2009. Following discussions with EPA, the Respondents revised and resubmitted the Phase 2 Groundwater Work Plan on April 13, 2009. EPA approved the Phase 2 Groundwater Work Plan on May 11, 2009 subject to the modifications and comments included in Attachment 1 of EPA's May 11, 2009 letter. EPA's May 11, 2009 letter also included comments on the March 2009 Phase 1 Groundwater Report, that were to be addressed in the final RI/FS Report (now renamed the OU2 Planning Support Document)."*

Response

This is a new comment regarding a minor wording change and no response is required.

USEPA Comment No. 12

*The sentence was revised to "The respondents have provided formal responses to USEPA's comments under separate cover." The responses were received on and dated June 17, 2011.*

*Section 1.0, Introduction, Page 5, Paragraph 4, Lines 6 and 7. This sentence states the Respondents will provide formal responses to USEPA's comments under separate cover. EPA has not seen this document. Responses detailing how each of EPA's comments are addressed in the revised OU1 RI/FS (as required by the 2006 SOW) would be helpful, but do not substitute for not having revised the report as requested.*

Response

No response required.

USEPA Comment No. 13

*Comment was addressed as requested, revision is acceptable except that the Site Boundary needs to be shown in addition to the Presumptive Remedy Area boundary where the two boundaries overlap.*

(ORIGINAL COMMENT) Figure 1.2. Please revise Figure 1.2 to show the Site boundary and OU1 and OU2 on the more detailed topographic map included in the Dispute Resolution Agreement.



Response

This is a new comment regarding a minor change to a figure and no response is required.

USEPA Comment No. 28

*Comment was addressed as requested, revision is acceptable except for the possible errors on Figure 1.4 and Table 1.1 as discussed below. The statement that east of the site groundwater flow would be unaffected was removed, and replaced with a detailed discussion of the groundwater elevation monitoring during the March 2011 spring flooding event. The revised conclusion is that during the March 2011 flooding groundwater elevations east of Dryden Road were affected (i.e. increased in elevation due to flooding of the river), however, groundwater flow was generally to the south away from the portion of the Great Miami river north of the site. The newly added figure C.53 supports this interpretation. In addition, CRA appears to have corrected the improper use of the contouring software in the other groundwater flow maps.*

*Figure 1.4 and Table 1.1 were added to show the response in groundwater elevation to the dropping of river discharge following the March 2011 flooding event. The groundwater elevations for monitoring well MWV-226 (located adjacent to the Dryden Road Bridge) appear to be anomalous or erroneous. Figure 1.4 and Table 1.1 show MWV-226 groundwater elevation to be 725.20 ft. MSL on March 7, 2011 during peak flooding. However, Figure C.53 indicates MWV-226 was inaccessible on this date; also the groundwater elevation of 725.20 ft. MSL would be several feet higher than the elevation of the Great Miami River shown on Figure C.53, which makes MWV-226 groundwater elevation suspicious (groundwater should be flowing from the river to the aquifer, and the river elevation should be higher than the groundwater elevation).*

*(ORIGINAL COMMENT) Page 11, Groundwater Flow Direction and Horizontal Gradients, Paragraph 3: The last sentence states that east of the Site groundwater flow direction in the Upper Aquifer Zone would be unaffected by the GMR and flow would be predominantly to the south-southwest. This statement is not supported by the groundwater elevation contour maps presented in Appendix B. For the months of high river levels (February, April, and May 2009 and March 2010) there are no shallow wells east of the site to demonstrate this. Contours showing flow to the southwest or southeast along Dryden Road are not based on any site shallow wells in the northern half of the site, rather the contouring software appears to be improperly using the Dryden Road Bridge gauge as a point source elevation (it represents the surface of the river rather than a point). Also, MWV-208, which is located next to Dryden Road along the eastern Site boundary, showed groundwater elevation response to high river levels: 710.46 ft MSL in April 2009, 711.29 ft MSL in May 2009; both high river months; by July 2009 the groundwater elevation in MWV-208 had dropped to 709.49 ft MSL. These facts show that groundwater east of the Site could be affected by high river levels.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

5

Reference No. 038443-89

### Response

CRA understands that the statement "improper use of the groundwater contouring software" refers to the use of interpolated surface water elevation "ghost points" along the Great Miami River (GMR) to force the contouring software to recognize the GMR as a surface water body. During meetings in 2009, USEPA's subcontractor, CH2M Hill, requested the use of the surface water elevation ghost points along the section of the GMR west and north of the Site. The participants in the meeting (including USEPA) discussed and agreed to use three points along the GMR. Given the typical magnitude of the differences between the surface water elevation in the GMR and surrounding groundwater elevations, the use of three points or a more continuous series of points to represent surface water elevations in the GMR does not significantly impact the resulting groundwater contours. CRA used 41 points. We believe this is consistent with the 2009 discussions and agreement.

MW-226 was inaccessible on March 7, 2011. CRA calculated the groundwater elevation for MW-226 using transducer datalogger values. CRA has subsequently reviewed the transducer datalogger calculations and confirmed that there was an error with the MW-226 March 7, 2011 groundwater elevation value. The groundwater elevation for MW-226 on March 7, 2011 was 718.1 ft AMSL, which was lower than the GMR elevation.

### USEPA Comment No. 29

*Comment was addressed as requested; revision is acceptable except that Figure 1.5 does not clearly show the Presumptive Remedy Area boundary, which should also be shown in addition to the Site Boundary where the two overlap.*

*(ORIGINAL COMMENT) Page 12, Section 1.2.1.3, Hydrology. This section must include at least some discussion regarding the ponds on the site and surface drainage, since these factors will be taken into account in the streamlined FS. Frequency of flooding should also be discussed, as flooding will affect selected remedy.*

### Response

This is a new comment regarding a minor change to a figure and no response is required.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

6

Reference No. 038443-89

USEPA Comment No. 30

*Comment was addressed as requested. However, the presumptive remedy area boundary covers the site boundary – please revise to show the entire portions of both boundaries.*

*(ORIGINAL COMMENT) Page 12, Section 1.2.1.3, Hydrology. Please reference and include a copy of RI Figure 3.13, Floodway and Floodplain Map in the OU1 RI/FS.*

Response

This is a new comment regarding a minor change to a figure and no response is required.

USEPA Comment No. 33

*Comment was not addressed as requested, revision is not acceptable. Instead of the requested text change "...summary of the chemical data at sampled locations, and a streamlined assessment of associated risks," CRA provided three tables of contaminants of concern for soil, groundwater and soil vapor. However, CRA did not provide any information regarding how the COCs were derived (e.g., risk screening or all detected analytes). The basis for the COCs must be provided. Also, the statement regarding COCs must be revised to "...soil, groundwater, and soil vapor are presented in Tables 1.2, 1.3, and 1.4, respectively" to be consistent with actual tables.*

*July 2010 Comment 15. Not Addressed on Page 14, Section 1.2.2.1, Nature and Extent of Impact and Waste Material. CRA did not address Comment 15 in the revised text. See original comment below and revise as follows:*

*This section presents a detailed summary visual description of the nature of the waste material that was brought onto the various portions of the Site as backfill encountered at investigated locations at the Site, and a discussion of associated contaminants a summary of the chemical data at sampled locations, and a streamlined assessment of associated risks. This discussion is based on a review of historic documents, a review of aerial photographs (as detailed above) and several intrusive 2008-2010 investigations, including borehole advancement, test pit and test trench excavation, soil vapor probe installation, and soil, groundwater and soil vapor sample collection."*

*(ORIGINAL COMMENT) Page 8, Section 1.2.2.1, Nature of Backfilled Material, Paragraph 1. See Comment Nos. 1, 3, 4 and 9. Characterizing the nature of the waste material based solely on CRA's visual observations in a limited number of test pits, trenches and soil borings, without any acknowledgement of the limited analytical data available at these locations, is not a key factor in implementing the presumptive remedy; and this entire section must be deleted or revised. The landfill*



*operated without a license for more than 20 years, and then was a licensed MSW landfill. The limited visual, and even more limited analytical data CRA collected, characterizes only a fraction of the heterogeneous waste materials in the 80-acre landfill. Also, consistent with EPA's presumptive remedy guidance, the horizontal and vertical extent of the hazardous substances CRA did detect in the landfill (frequently above  $1 \times 10^{-4}$  and  $HI=1$  risk levels, and even above RCRA TCLP levels) has not been characterized.*

*CRA's 2008-2010 investigations and previous data indicate the Site clearly warrants remedial action consistent with the scope of the streamlined OU1 FS outlined in EPA's January 9, 2008 letter. Because this is a landfill, with unacceptable levels of groundwater and landfill gas contamination, EPA's minimum closure requirements for the Site would be RCRA Subtitle D (solid waste). Also, since OEPA's solid waste requirements are more stringent than RCRA Subtitle D requirements, any final remedy for the Site would also have to comply with state requirements. The Respondents had over 2 years to collect additional data to defensibly demonstrate if there were any areas of the landfill where there was not a basis for solid waste capping (consistent with SOW requirements); but did not.*

*In any case, CRA's unapproved OU1 Risk Assessment still indicates remedial action is warranted at the Site based on on-Site industrial/commercial worker exposure to surface soil ( $RME HI>1$ ); construction/utility worker exposure to surface and subsurface soil ( $RME HI>1$ ); and off-Site resident exposure to on-Site shallow groundwater ( $RME$  cancer risk  $>1 \times 10^{-4}$  and  $RME HI>1$ ).*

*Revise this section as follows:*

1.2.2.1 Nature of Backfilled Landfilled Material and Streamlined Risk Assessment  
*~~"The nature of the material backfilled on the Site is a key factor in identifying data gaps and implementing a presumptive remedy. This section presents a summary provides a visual description of the nature of the material that was brought onto the various portions of the Site as backfill type(s) of landfill materials encountered at investigated locations at the Site, a summary of the chemical data at sampled locations, and a streamlined assessment of associated risks.~~*

#### Response

CRA derived the COCs from analytes that were present in concentrations greater than USEPA soil, groundwater or soil vapor criteria, presented a cumulative cancer risk greater than the USEPA cancer risk range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$  or a hazard index greater than 1, and the risk or hazard presented by the analyte was a minimum of 5 percent of the cumulative risk or hazard.

This comment also requests a minor wording change. No further response is required.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

8

Reference No. 038443-89

USEPA Comment No. 59

*Comment was not addressed as requested. Revisions are unacceptable. In CRA's response to comments letter (June 17, 2011), it is stated that a conflicting sentence was deleted. However, it appears that all of paragraph 2 was deleted, which includes the requested revision. This avoids addressing the issue presented in this comment. At a minimum, CRA should present their rationale for simply deleting the paragraph.*

*July 2010 Comment 34. Not Addressed on Page 30, Dryden Road Businesses, Paragraph 2. Please revise as previously requested. Dryden Road Businesses (Parcels 5173, 5174, 5175 and 5176), Page 17, Paragraph 1: If the materials disposed on the Central Parcels are expected to be present on at least the western portions of Lots 5173, 5174, 5175 and 5176, then it would also follow that the materials disposed on the already developed, eastern portions of these Lots may be similar to the materials disposed in the Northern Parcels. Although CRA's visual and analytical data is limited, available data for these parcels seems to confirm this (e.g., TCE 630 ug/m<sup>3</sup> in GP-14 directly behind building on Lot 5173 shown in 1954 air photo, and 1,200 ug/m<sup>3</sup> TCE in GP-12 on north side of building on Lot 5175 shown in 1954 air photo, compared to maximum of 190 ug/L TCE in Central Parcel gas probes); and would be consistent with the tax map (from 1956-1959 according to page 12 of RI), which shows that the eastern portion of these properties had already been filled and developed, along with the Northern Parcels, before filling began in the Central Parcels. Please revise the last sentence of this paragraph as follows: "Therefore, the materials mentioned above as being disposed on the Central Parcels would also be expected to be present on at least the western portions of Parcels 5173, 5174, 5175, and 5176; and the materials disposed on the eastern portions of these parcels may be similar to the materials disposed in the Northern Parcels."*

Response

Stratigraphic logs from investigations conducted on the Northern Parcels contained fill that was classified as MSW, based on the definitions listed in OAC Chapter 3745. Stratigraphic logs from investigations conducted on eastern portions of the Dryden Road Business Parcels did not contain fill that could be classified as MSW.

Further, USEPA's use of chemical concentrations in soil vapor to establish the type of waste disposal is inappropriate. The USEPA ignores the fact that industrial activities have occurred on the Dryden Road Business Parcels and on adjacent on- and off-Site properties for over 50 years.

CRA deleted the paragraph in question, as discussed and agreed to during the March and April 2011 conference calls between USEPA and the Respondents as it was not material to the OU1 RI/FS.





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

9

Reference No. 038443-89

USEPA Comment No. 60

*Comment was not addressed as requested, revision is unacceptable. Although CRA mentioned the fact that the drainage tile was damaged and repaired during the UST removal, neither the potential for a preferential pathway for landfill gas nor the need to delineate the tile was discussed.*

*(ORIGINAL COMMENT) Section 1.2.2.1, Nature and Extent of Impact and Waste Material, Page 30, Dryden Road Parcels, Paragraph 3. EPA provided CRA with a copy of the UST removal report. Another significant item in the report is that there appears to be drainage tile at the Site, which CRA has not delineated, and which could provide a preferential pathway for landfill gas. Please revise this section to include this, and all other relevant information from the report.*

Response

As stated on page 39 of the OU1 RI/FS report (CRA, June 2011), USEPA provided the BUSTR file related to the removal of the UST(s) from the Conway Fence facility at 2089 Dryden Road to Respondents on March 22, 2011. The BUSTR file contained field logbook notes stating "A field tile was broken and repaired by contractor." Respondents did not have this information in order to delineate the location of field tiles during field work completed between 2008 and 2010.

No information with respect to the location or use of the field tile is available and, it is therefore, not possible to make a conclusion as to whether the field tile presents a preferential pathway for landfill gas migration. During the Building Physical Survey completed in June 2011, representatives for Respondents, Ohio EPA, and CH2M Hill, USEPA's oversight contractor, did not observe evidence of a drainage tile on site, including on Parcel 5175 specifically (the former location of the Conway Fence facility). No one observed floor drains that might be connected to a field tile in the main building located on Parcel 5175. The attached garage did have a floor drain but the building is not air tight and is in such poor condition that the accumulation of indoor air contaminants is not possible. The location of the field tile is unknown. The Respondents do not agree with USEPA that there is a need to delineate the field/drainage tile, as results from the Vapor Intrusion (VI) Investigation will indicate if it does indeed present a preferential pathway.

USEPA Comment No. 66

*Comment was not addressed as requested, revision unacceptable. CRA did add a statement that no TAL/TCL samples were collected from soil or landfill material on Parcel 3275, and did reference that Ohio EPA collected two sediment samples (and that Payne Firm collected six sediment samples); however, CRA did not discuss or present the sediment sampling results as requested.*



July 2010 Comment 39 Not Fully Addressed in Quarry Pond Parcels, Pages 32 to 35. As previously requested, please clarify that no TAL/TCL samples were collected from landfill material or soil on Lot 3274, and include the results for OEPA's sediment samples.

(ORIGINAL COMMENT) Quarry Pond, Page 18, Paragraph 5: See Comment 37 and 38 and revise as follows: "Thus, at CRA's test trench and soil boring locations in the northeast portion of Parcel 5178 and in the embankment surrounding the Quarry Pond Parcels contain, CRA observed mainly fill material with some RW and CD; however, the waste is almost entirely present in the northeastern portion of Parcel 5178 and in the embankment surrounding the Quarry Pond. Consistent with the presumptive remedy, CRA only collected limited samples of landfill material for TAL/TCL analysis from the 20 acre Quarry Pond area (4 samples total from 3 locations on Lot 5178: TT-14, TT-16 and TT-17). No TAL/TCL samples were collected from landfill material or soil on Lot 3274; and there is no visual or chemical data for any of the material on Lot 3275. Sediment data for the Quarry Pond is limited to the two sediments samples OEPA collected 15-18 feet below the surface of the Quarry Pond 150 and 350 feet west of the northeast corner of the Quarry Pond in 1996 (sample S15OEPA and S16OEPA).

#### Response

Based on very limited sampling, Quarry Pond sediments have elevated concentrations of PAHs, metals, and some pesticides.

CRA's RI Report presented the data relevant to sediments and recommended that additional sediment data be collected from the Quarry, Large, and Small Ponds to better characterize human health and ecological risks. USEPA has not issued any comments on the 2010 RI Report.

#### USEPA Comment No. 68

*Comment was not addressed as requested, revision unacceptable. Some inaccuracies were removed from the existing paragraph, and a paragraph regarding the conductive anomaly on Barnett Lot 4610 was added. However, this discussion needs additional revision.*

*"The EM61 results for Parcels 3753 and 4423 (Jim City Salvage property) indicate that the majority of the response can likely be attributed to metallic objects at or near the ground surface. The lack of any significant magnetic anomalies in this area lends support to this conclusion." It is not clear how the lack of magnetic anomalies supports the conclusion that the metal detection anomalies are related to scrap metal and partially buried car parts. Explain how the total field magnetic would not respond to shallow or surficial metallic material. If the magnetic survey avoided areas of surficial shallow metal, then the conclusion is not justified.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

11

Reference No. 038443-89

*"It is not possible to say whether TT-18 and GP07-09 were located within or outside of conductive anomalies, as Parcel 3753 was not included in the EM31 Electromagnetic Survey because the Parcel could not be surveyed, due to the presence of material that could not be moved." This discussion needs an introduction regarding which parcels or portions of parcels were not surveyed; revising Figure 1.8 to shade areas that were not surveyed would be preferable.*

*Page 47, paragraph 1, lines 15 and 16: The statement that identified materials and associated depths are consistent with EM31 and EM61 readings for the anomalies is not justified. TT-17 encountered rebar and scrap metal, even though it is located outside a metal detection anomaly. VAS-22 encountered only foundry sand, even though it is located within a metal detection anomaly.*

*July 2010 Comment 42 Not Addressed in Jim City and Barnett Parcels on Pages 35 to 37. Please revise as previously requested. Additional test pits and trenches will be needed in these areas as part of OU2. Please remove all statements indicating that the source of the anomalies has been identified.*

*(ORIGINAL COMMENT) Jim City and Barnett Parcels (Parcels 3753, 4423, 4610 and 3252), Page 19, Paragraph 3, Lines 10 to 14: The statement that CRA encountered rebar, scrap metal, and foundry sands in the upper five feet of fill during the excavation of TT-17 and during the drilling of VAS-22, which were installed in and around these anomalies is not entirely accurate. First, although brown sand fill (from the log, it is not clear if this is foundry sand), rebar and scrap metal were detected in the first five feet of fill in TT-17, TT-17 was located approximately 50 feet from the northern conductive anomaly identified on Jim City property, and approximately 75 feet from the closest magnetic anomaly - in an area where no anomalies were identified. Second, although VAS-22 was located within or adjacent to one of the conductive anomalies and one of the magnetic anomalies, the only landfill material identified in this boring was foundry sand. Based on the figures and boring logs, the other, limited investigative locations on the Jim City properties (i.e., TT-18, GP07-09 and GP08-09) were also outside the Jim City magnetic anomalies, and TT-18 and GP07-09 were outside the conductive anomalies. GP08-09 may have been located within or adjacent to one of the conductive anomalies at the Jim City properties; however, this boring only contained brown sand fill, not rebar or scrap metal.*

*This section of the FS also does not discuss the conductive fill anomaly on Barnett Lot 4610. GP09-09 was at the northwestern end of this anomaly and contained grey, brown and black silt, sand and gravel fill. CRA's only other investigative location on Lot 4610, GP09-09, also contained brown and dark brown silt, sand and gravel fill, and is located approximately 25 feet from the southeastern end of this anomaly. Please revise this section of the FS to provide a more accurate, complete discussion.*

#### Response

Prior to commencement of the EM61 survey on Parcels 3753 and 4423 (Jim City Salvage property), the landowner complied with a request to clear the area of parked cars and large car parts including doors, hoods, fenders, side panels, etc. This request was made to ensure that



the numerous large metallic objects located on the property would not mask the response of any suspected buried metal objects within the survey area. However, numerous smaller metal objects such as door handles, mirrors, bolts, small scraps of sheet metal were observed either on surface or partially buried as the EM61 survey was being completed. In some instances, these smaller metal objects were disseminated over a localized area, such as bolts spread out over an area measuring approximately 5 feet by 5 feet. While the EM61 was able to generate anomalous responses of varying intensity while surveying directly over these small surficial metal objects, the magnetometer survey did not yield any such anomalous responses. This can be attributed to several factors including the small size of the metallic objects (which did not create a measurable distortion of the earth's magnetic field), and also the presence of non-ferrous objects (i.e., objects constructed of aluminum, copper, etc). For larger buried ferro-metallic objects including storage tanks and clusters of drums, the effective depth of investigation of the EM61 is approximately 10 feet below ground surface (bgs).

Conversely, magnetometer surveys can generally detect buried ferro-metallic storage tanks and drums to depths ranging from 20 to 30 feet bgs. Thus, the lack of any magnetic anomalies (coupled with measurable EM61 anomalies) supports the conclusion that the majority of the response is generated by objects at or near ground surface, and not buried deeper (i.e., 20 to 30 feet bgs). The observations in the field as both the EM61 and magnetic surveys were being conducted further confirm that the EM61 metal detection anomalies were related to small, surficial metallic objects and partially buried metallic objects.

Please see Figures 3, 4, and 6 of the Result of the Bathymetry Survey and Geophysical Investigation (CRA, May 27, 2009) to see which parcels and portions of parcels were and were not surveyed using the EM61, magnetometer, and EM31 survey instruments, respectively.

USEPA Comment No. 70

*See individual responses below. July 2010 Comment 46 Not Addressed on Pages 38 to 46. Please revise. Section 1.2.3, Nature and Extent of Contamination, Pages 20-23. This section of the FS must be revised consistent with all previous FS comments or deleted. Some specific comments are listed below.*

Response

This comment does not require a response.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

13

Reference No. 038443-89

USEPA Comment No. 71

*Comment was not addressed as requested, revision unacceptable. "at investigated locations" was not added to the sentence.*

*July 2010 Comment 47 Not Fully Addressed on Page 38. Revise Lines 1 and 2 as follows: "to identify the impacts resulting from the previously described historic Site activities at investigated locations."*

*(ORIGINAL COMMENT) Section 1.2.3, Nature and Extent of Contamination, Page 20, Paragraph 1, Lines 1 and 2: See previous comments. The full extent of contamination and impacts at the Site has not been identified. Please change "to identify the extent of impact" to "to identify impacts".*

Response

Site activities occur at investigated locations and thus the additional text requested is redundant. The requested revisions did not make sense, thus the OU1 RI/FS report did not include this change.

USEPA Comment No. 73

*Comment was not addressed as requested, revision unacceptable. The requested deletion actually reads "including the nature of impact at the site" rather than "nature and extent." However, the statement was not deleted. Although this is an OU-1 streamlined RI/FS, such a sweeping statement cannot be applied to this document, especially because off-site groundwater impacts (OU-2) are not discussed in this document, and groundwater is part of the nature of impact at (and from) the site.*

*July 2010 Comment 49 Not Addressed on Page 38, Section 1.2.3, Nature and Extent of Contamination, Paragraph 2, Line 6. See previous comments. CRA does not know the nature of the impact at the Site because CRA's characterization across OU1 is horizontally, vertically and analytically limited. Please Address. Section 1.2.3, Nature and Extent of Contamination, Page 20, Paragraph 3: See previous comments. The nature and extent of impact at the Site has not been fully characterized. Please delete "including the nature and extent of impact at the Site" from this paragraph.*

Response

Pages 6 and 7 clearly define the parcels and media which are part of OU1 and OU2, respectively. The statement refers to "impacts at the Site" (emphasis added), which excludes discussion of off-Site impacts.

Page 59, paragraph 2 of the report text further clarifies the discussion:



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

14

Reference No. 038443-89

*Additionally, although there is contamination in groundwater beneath the Site, the source(s) and extent of groundwater impact have not been fully defined. Therefore, groundwater as a medium is only discussed below to conceptualize the extent of impacted material, and to present context to the risks of contaminants leaching through the soil, waste, and fill. The Respondents will further assess groundwater impacts during the OU2 RI/FS.*

USEPA Comment No. 75

*Comment was not addressed as requested, revisions unacceptable. CRA did not add any discussion regarding VOCs in surface soils, including the fact that surface soil sampling was limited to Parcel 5177.*

*(ORIGINAL COMMENT) Section 1.2.3, Nature and Extent of Contamination, Page 39, Bullet 5, Lines 1 to 3: This bullet states that CRA did not identify any VOC impacts in OU1 surface soil based on the results of previous investigations. First, VOC impacts in surface soil are generally limited because these chemicals are volatile and, at shallower depths, they are more likely to volatilize into the atmosphere. Second, previous surface soil sampling was limited to Lot 5177; however, even so, VOCs were detected in S8-EPA (TCE, PCE and toluene), in slightly deeper S01-OEPA (PCE), and in S1-EPA, S5-EPA, S6-EPA, S7-EPA, S03-OEPA, S08-OEPA, S10-OEPA and S11-OEPA (toluene). Please revise this bullet to provide this more complete information.*

Response

The bullet was revised to "CRA did not identify any VOC impacts in OU1 surface soil (i.e., 0 to 2 ft bgs) at concentrations greater than RSLs based on the results of previous investigations." Discussion of VOC detections at the locations specified in USEPA's comments do not contribute to the report as there were no VOCs detected in surface soil at concentrations greater than USEPA RSLs.

USEPA's comment is incorrect. CRA collected a surface soil sample from TT-16 on the Quarry Pond Parcel 5178. The addition of the text that indicates that surface soil sampling was limited to Parcels 5177 and 5178 is a minor text change and requires no response.

USEPA Comment No. 77

*Comment was addressed as requested, except that only parcels 5054, 5172, and 5177 are referenced as having samples containing chlorinated VOCs, as shown on Figure 1.12, which is not accurate.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

15

Reference No. 038443-89

(ORIGINAL COMMENT) Section 1.2.3, *Nature and Extent of Contamination*, Page 39, Bullet 5, Lines 5 to 8: Chlorinated solvents were detected in landfill material in TP-2, TP-3, TP-4, TP-5, TP-6, TT-5, TT-7, TT-8, TT-9, TT-10, TT-11, TT-12, TT-19, TT-20, TT-21, TT-22 and TT-23. The composite sample from the 5 drums found by Valley Asphalt also contained 64,000 ug/Kg of TCE, as well as 1,1,1-TCA and vinyl chloride. Chlorinated solvents were also found in landfill gas samples collected in other areas of the Site where soil data is not available. Please revise as follows: "Chlorinated VOCs, including PCE, TCE, cis-1,2-DCE and one of its the degradation product VC, were also detected in soil landfill material samples collected from Parcel 5171, 5054, 5172, 5174 and 5176 (landfill material in Parcel 5173 and Parcel 5176 was not sampled). The source of these contaminants ~~is not clear but~~ may be related to the former Ottoson Solvent operations, as well as drums and other waste material in the landfill."

#### Response

The concentrations of chlorinated solvents in TT-5, TT-8, TT-10, TT-11, TT-12, TT-19, and TT-23 were greater than USEPA Soil Screening Levels (SSLs) for Protection of Groundwater, but were not greater than USEPA RSLs.

USEPA Soil Screening Guidance (SSG) User's Guide (USEPA, July 1996) states:

*SSLs developed in accordance with this guidance are based on future residential land use assumptions and related exposure scenarios.*

*SSLs are not national cleanup standards. [emphasis from USEPA] SSLs alone do not trigger the need for response actions or define "unacceptable" levels of contaminants in soil.*

*Generally, where contaminant concentrations equal or exceed SSLs, further study or investigation, but not necessarily cleanup, is warranted.*

*SSLs are concentrations of contaminants in soil that are designed to be protective of exposures in a residential setting.*

With some exceptions, the entire Site is zoned 'M-2 General Industrial'; therefore, application of SSLs that were designed to be protective of residential exposures is not appropriate. The significant groundwater data for the Site are the appropriate point of comparison for assessing groundwater impacts.

The use of data from waste samples collected from drums, which were subsequently removed from the Site, to characterize soil conditions at the Site is misleading and inappropriate.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

16

Reference No. 038443-89

As shown on Figure 1.12, PCE was detected at concentrations greater than its Residential USEPA RSL in subsurface soil sample from TT-20, located on Parcel 3058. CRA inadvertently omitted Parcel 3058 from the revised text.

USEPA Comment No. 78

*Comment was not addressed as requested, revision unacceptable. The second sentence in this bullet should be revised to: "Oil and hydraulic fluids leaking from vehicles and from documented waste disposal would potentially contribute PAH contamination."*

*(ORIGINAL COMMENT) Section 1.2.3, Nature and Extent of Contamination, Page 39, Bullet 6: SVOCs are also present in oil and brake fluid. Alcine's notes on the tax map indicate these materials were disposed at the Site, so their presence at the landfill is also from the waste disposal of these materials, not just from oil and hydraulic fluids leaking from vehicles in the former auto areas. Please revise this bullet to include this information.*

Response

For clarification, USEPA did not state in the original comment that "documented" be added to the text.

The comment relies on undated, handwritten notes on a tax map. The map is not definitive or determinative about the fate of these materials. The notes imply that the Site received these materials.

USEPA Comment No. 82

*Comment was not addressed as requested, revision unacceptable. Although CRA's response to comment letter indicates they revised as requested, the requested statement was not removed.*

*(ORIGINAL COMMENT) Leachate, Page 41, Bullet 1, Line 15: The statement that perched areas are likely transient and only present seasonally or after significant precipitation events is not justified by the available data. This statement should be removed.*

Response

This is a comment regarding a minor wording change and no response is required.





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

17

Reference No. 038443-89

USEPA Comment No. 84

*Comment was addressed as requested. During the revision in response to comment no. 84, the statement referring to high permeability of waste material preventing the generation of leachate was removed. However, discussion of perched water was limited to the previous bullet.*

*July 2010 Comment 56 Not Fully Addressed in Leachate, Page 41, Bullet 2, Line 14: The statement that the high permeability of the waste material would appear to prevent the generation of perched areas of leachate cannot be justified by the level of investigation performed on the wastes. In addition, the high permeability referred to would contribute to the migration of leachate to groundwater. Please revise.*

*(ORIGINAL COMMENT) Leachate, Page 22, Bullet 2: This bullet states that the high permeability of the native soil and waste material would appear to prevent the generation of perched areas of leachate. However, CRA observed perched water at GP19-09 (1' perched water at 19 ft-bgs) and GP-20-09 [1' gray sand, wet (perched water) at 7 ft-bgs]; and wet zones above the water table in GP01-09 (0.5' wet at 8 ft-bgs) and GP18-09 (1.6' wet at 21.1 ft-bgs). CRA did not collect any water or soil samples from these intervals, however, soil gas samples from these locations had some of the highest levels of soil gas concentrations at the Site, and all locations contained VOCs in soil gas above  $1 \times 10^{-4}$  or  $HI > 1$  industrial risk concentrations. Methane was also detected at two of these locations: GP01-09 and GP18-09 consistently above the UEL for methane (20.6 to 28.4 percent methane). CRA should also review other test trench, test pit, VAS and monitoring well borings to identify any other locations where perched water or wet zones above the water table were identified. Please revise this section of the FS to discuss this thoroughly.*

Response

Original comment was addressed, no response required.

USEPA Comment No. 85

*Addressed as directed but with insufficient information "(e.g., fill to the water table with clean material prior to capping)". Elevation/thickness of fill is not discussed.*

*July 2010 Comment 55 Not Fully Addressed on Page 42, Bullet 1. CRA indicates the Large and Small Ponds will be addressed through capping, but it does not seem like this will work without underground drains unless this area is filled in prior to capping. Please state whether these areas will be filled, the type of fill material that will be used for filling, and to what estimated elevation/thickness. While some amount of regrading and consolidation of landfill material is to expected at this Site (although CRA did not discuss this), fill material that is anticipated to be in contact with the rising and falling groundwater table should at least be clean fill material.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

18

Reference No. 038443-89

(ORIGINAL COMMENT) Page 21, Leachate, Bullet 1: The Large and Small Ponds are fed by groundwater and rise and fall with groundwater levels (RI page 104). Since the ponds appear to be low spots in the landfill that were not filled in all the way, the water in the Large and Small Ponds is leachate, although it was never sampled by CRA. Please revise this bullet to discuss the potential for leachate generation in the Large and Small Ponds, since it would seem that this will need to be taken into account during RD (e.g., underground drains or other engineering technologies may be needed).

Response

Elevation or thickness of fill used in capping of the Large and Small Ponds is a detail more appropriate for the Remedial Design (RD).

USEPA Comment No. 87

Comment was not addressed as requested. CRA's response to comments letter indicates this comment was revised in accordance with a conference call, however, some of the requested revisions were not made - specifically that CRA did not install groundwater monitoring wells at locations or in intervals where high levels of lead and/or arsenic were detected in VAS samples (e.g., 1,940 ug/L in an unfiltered shallow groundwater sample from VAS-5 in the Northern Parcels, and 3,200 ug/L in an unfiltered shallow groundwater sample from VAS-11 in the Central Parcels).

July 2010 Comment 58 Not Addressed on Pages 41 (Bullet 3) and 42. Please revise this paragraph as follows:

"As infiltrating precipitation migrates vertically downward through waste or contaminated soil, or if waste or contaminated material is in contact with groundwater, ~~it~~ contaminants may leach ~~contaminants~~ from the waste or soil and be transported the ~~contaminants~~ to the underlying groundwater. CRA did identify lead at concentrations greater than the TCLP criteria in the TCLP leachate analysis completed on two composite samples collected from black sand on Parcels 5054 and 5177 and in the drum removed from TT-21. Lead was also detected at concentrations greater than the TCLP criteria in a composite sample collected from the five drums removed from Valley Asphalt, and was above EPA's RSL for soil groundwater protection criteria at the MCL based on a DAF of 10 (140 mg/Kg) in at least 20 out of 41 test pit, trench and soil sampling locations. However, Concentrations of lead in groundwater samples collected by CRA in the groundwater monitoring wells are below USEPA MCL RSLs, with the exception of the concentration of total lead in one of two samples from MW-215A and a sample from P-211. However, CRA did not install groundwater monitoring wells at locations or in intervals where high levels of lead and/or arsenic were detected in VAS samples (e.g.,



1,940 ug/L in an unfiltered shallow groundwater sample from VAS-5 in the Northern Parcels, and 3,200 ug/L in an unfiltered shallow groundwater sample from VAS-11 in the Central Parcels). The presence of suspended particulate matter in VAS samples may have contributed to elevated metals concentrations in unfiltered VAS samples, thus a comparison of the total metals VAS results to RSLs was may not be appropriate and was not completed. USEPA approved the collection and analysis of the filtered groundwater samples in a conference call on December 3, 2008. Beginning on December 6, 2008, and, consistent with CRA's streamlined, presumptive remedy investigation, CRA collected and filtered the groundwater samples submitted for dissolved arsenic and dissolved lead analyses from a minimum number of approximately every fourth sampling interval. After the groundwater samples were analyzed, it became apparent, however, that filtered data is not available for all intervals where high levels of lead or arsenic were detected in unfiltered VAS samples, including the VAS-5 and VAS-11 sampling intervals discussed above. Concentrations of unfiltered (i.e., total) arsenic and lead at all VAS locations were greater than RSL criteria. Concentrations of dissolved (i.e., filtered) metals sampled at all VAS locations (where sampled) were less than the concentrations of total (i.e., unfiltered) metals at all comparable locations, typically by more than an order of magnitude, and were less than MCL RSLs, with the exception of VAS-11, VAS-24, VAS-26 and VAS-27. Therefore, the concentrations of metals in these unfiltered VAS samples were biased high due to metals present in the particulate. The groundwater data indicate that there does not appear to be significant leaching of lead into the under groundwater. Benzene was detected above TCLP leaching criteria in the TT-21 drum removed by CRA, and benzene, TCE, PCE, vinyl chloride, and/or cis-1,2-DCE were detected in landfill materials at concentrations above EPA RSL soil groundwater protection criteria equal to the MCL and/or a cancer risk of 10<sup>-4</sup> based on a DAF=10 at the following locations: TP-3, TP-5, TT-8, TT-9, TT-20, TT-21, TT-22 and TT-23. These VOCs were also detected above MCLs and/or EPA RSLs equal to a cancer risk of 10<sup>-4</sup> and/or a HI=1 in groundwater samples collected from within the landfill area (VAS and/or groundwater monitoring well samples). Groundwater will be further assessed during the OU2 RI/FS.

(ORIGINAL COMMENT) Leachate, Page 22, Bullet 2: The statement that, with the exception of lead in MW-215A and P-211, concentrations of lead in groundwater samples collected by CRA in the Central and Northern Parcel monitoring wells are below MCLs, and therefore, there does not appear to be significant leaching of lead into the underlying aquifer, is misleading. Lead was detected at very high concentrations in unfiltered shallow and deep groundwater samples across the Site. For example, lead was detected at 1,940 ug/L in an unfiltered shallow groundwater sample from VAS-5 in the Northern Parcels, and at a concentration of 3,200 ug/L in an unfiltered shallow groundwater sample from VAS-11 in the Central Parcels. A comparison of available filtered and unfiltered groundwater data collected from some sampling locations and intervals (filtered data is not available for all sampling locations and intervals, and not for the VAS-5 and VAS-11 sampling intervals discussed above), indicates that most of the lead in the VAS samples may have been sorbed onto particulate matter in the groundwater, instead of dissolved



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

20

Reference No. 038443-89

*in the groundwater. However, consistent with the presumptive remedy, CRA did not collect filtered groundwater data from all VAS samples to confirm this, nor did CRA install permanent groundwater monitoring wells at locations where high levels of lead were detected in unfiltered samples and resampled. Also, consistent with the presumptive remedy, CRA installed several monitoring wells without VAS, and did not sample these wells for lead (e.g., MW-225, MW-226, MW-227, MW-228 and MW-229). As a result, the full extent of lead contamination in on-Site groundwater is uncertain. Please revise this bullet to provide a more complete, accurate summary as discussed above.*

Response

Based on a comparison of filtered and unfiltered VAS and groundwater sample results, filtered metals concentrations are less than unfiltered metals concentration, typically by an order of magnitude due to the absence of particulates. The available data indicate that lead is not a significant groundwater contaminant at the Site and USEPA's comments overstate the risks associated with lead.

The OU1 RI/FS report documents concentrations of metals greater than RSLs in soil and groundwater samples collected from across the Site. The metals impacts are likely associated with the disposed waste, including foundry sands, slag, fly and bottom ash, and ash from the on-Site combustion of waste material. Metals concentrations may also be due, in part, to background metals concentrations in native soils. The lack of Site-specific background investigation for metals represents a data gap.

USEPA Comment No. 91

*Comment was not addressed as requested, results acceptable. The revised sentence reads: "Although elevated concentrations are present in a number of soil gas probes across the Site, (most notably in the northern parcels) further investigation in some area is warranted to confirm:" It should be noted, however, that CRA's response to this comment in its response to comments letter includes a table that omitted the high TCE soil gas concentrations detected in GP09-09 (part of CRA's rationale that soil vapor concentrations in GP09-09 are not significantly elevated). This table also excluded the high TCE concentrations in GP20-09.*

*July 2010 Comment 62 Not Fully Addressed on Page 43, Landfill Gas and Soil Vapor, Bullet 3. Please revise as requested. See results for GP-13 and GP-9 (based on residential). Page 23, Landfill Gas and Soil Vapor, Sentence 2: The sentence "Although significantly elevated concentrations are not present across the Site" is not accurate. See previous comments and revise as follows: "Although significantly elevated concentrations are ~~not present across~~ at the Site (most notably at Valley Asphalt, along Dryden Road and at the southeastern Site boundary on Lot 4610); further investigation is warranted to confirm:"*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

21

Reference No. 038443-89

Response

CRA has revised the referenced table to include TCE concentrations.

<b>Parameter</b>	<b>Valley Asphalt GP18-09 Soil Gas Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Dryden Road GP13-09 Soil Gas Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Southeastern Site Boundary GP09-09 Soil Gas Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>
1,1-DCA	400 J	2,900	2.1
Benzene	14,000	ND (19)	1.9
Ethylbenzene	48,000	ND (26)	3.2
Naphthalene	980 J	ND (53)	3.8
TCE	540 U	43 U	2,000
Vinyl chloride	4,800	6,800	ND (0.51)
Xylenes	47,000	ND (26)	19

ND - not detected

J - estimated

U - the analyte was analyzed for but not detected. The associated numerical value is the quantitation limit

USEPA Comment No. 96

*Comment was not addressed as requested. CRA revised the bullet to provide more specific information, but did not add the requested revision. At a minimum, the current text should be revised to read:*

*"...indicating that CRA advanced BH04-09 and BH08-09 near the boundaries of the LNAPL plume at those locations.*

*July 2010 Comment 61 Not Addressed in Groundwater, Page 45, Bullet 2. Please revise as requested. Page 22, Groundwater, Bullet 3, Sentence 2: Since LNAPL was still present in BH04-09; BH07-09 and BH08-09, the full extent of LNAPL has not been delineated, so it is uncertain whether MW-219 is in the approximate center of the LNAPL area. Please revise as follows: "CRA has not observed free-phase LNAPL in the monitoring well (MW-219) installed in the approximate center of the LNAPL area (however, the actual extent of LNAPL has not been determined, e.g., beyond BH04-09, BH08-09 and BH07-09)."*

Response

USEPA is incorrect. The comment was addressed as requested. For clarification, USEPA did not state in the original comment that "at those locations" be added to the text.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

22

Reference No. 038443-89

As discussed in the Phase 2 Groundwater Investigation Letter Work Plan, dated May 20, 2009, CRA advanced four boreholes around VAS-04 in an attempt to delineate the LNAPL observed in this area. As agreed between CRA and USEPA, CRA offset the boreholes approximately 40 ft to the north, south, east, and west of VAS-04. Per USEPA's request (Comment No. 12 of the May 11, 2009 letter from USEPA), CRA advanced an additional four boreholes, stepping out an additional 40 ft from the original four boreholes, as CRA observed evidence of LNAPL in the original four boreholes. As agreed, CRA advanced eight boreholes to delineate the LNAPL in that area.

During the advancement of BH08-09, CRA observed a layer of black material resembling foundry sand. The material did not have the petroleum odor that is characteristic of the LNAPL found at the Site. The soil cuttings exhibited no visible NAPL. BH08-09 was included within the LNAPL plume as the Sudan IV dye test (25 - 30 ft bgs) indicated trace presence of LNAPL.

Based on the PID readings, positive and trace readings from Sudan IV dye tests, and recorded observations of the soil cuttings from the boreholes (Appendix A.7 of the Streamlined RI/FS Report), the presence of LNAPL at BH04-09, and BH08-09 was marginal and not as strong as in samples collected from BH02-09, and BH07-09, indicating that CRA advanced BH04-09 and BH08-09 at or near the boundaries of the LNAPL plume. Further, CRA notes that USEPA agreed to the proposed location of MW-219, installed in the approximate center of the LNAPL plume area.

USEPA's requested revision implies that trace amounts of LNAPL present in BH04-09 and BH08-09 would not continue to decrease or cease completely at further distances from the approximate center of the LNAPL area (MW-219), contrary to what was actually observed. The field observations are consistent with the conclusions that the trace amounts of LNAPL present in BH04-09 and BH08-09 would continue to decrease or be absent further from the approximate center of the LNAPL area (MW-219).

In spite of the foregoing, the Respondents did make the requested change per USEPA's original comment.

#### USEPA Comment No. 97

*Comment was not addressed as requested, results unacceptable. A section titled "Potential Areas of principal Threat Waste" was added; the section gives a general description of the regulatory definition of principal threat wastes, and lists the areas included in this comment. These areas are further assessed in*



*Appendix D to determine if the areas meet the definition of a hot spot, and whether further investigation is required.*

*The assessment in Appendix D is based on answering four general questions regarding potential hot spots, as provided in EPA's presumptive remedy for municipal landfills guidance. CRA states that all four questions "must" be answered in the affirmative to support a decision to characterize and treat hot spots. The assessment was stated to determine if each area met the "definition" of a hot spot. However, EPA's guidance states that "the decision to characterize and/or treat hot spots is a site-specific judgment that should be based on the consideration of a standard set of factors", and lists the four questions presented in Appendix D. The guidance then states that an affirmative answer to all four questions indicates it is likely a significant risk reduction at the site would occur as a result of treating hot spots. The language referring to specific definitions and that all four questions "must" be answered in the affirmative should be removed. The intention of the evaluation for hot spots is not to "define" areas as hot spots requiring treatment, rather to identify areas where risk reduction could be achieved by treating hot spots.*

*A summary of the results of the evaluation should be added to the "Potential Areas of Principal Threat Waste" section on page 62, along with the identified data gaps associated with these areas and recommended additional investigations. Some of the proposed additional investigations are slated to be performed during the OU-2 RI (e.g., TT-9/GP15-09/VAS-08 and VAS-09/GP13-09); however, some of the proposed investigations were not included in this specification (e.g., TT-21/MW-29, GP19-09/VAS-04, and GP20-09/TT-23). If those investigations are not planned as part of OU-2 RI, the planned time frame for those investigations should be added. Also refer to Figure 1.31.*

*(ORIGINAL COMMENT) Page 46, Section 1.2.3.1, OU1 Data Gaps. Please include areas where principal threat waste has been identified or may be present as an OU1 data gap. This includes, but is not limited to, the following areas: TT-21/MW-229; GP18-09/TT-22; GP19-09; GP20-09/TT23; TT-9/GP15-09/VAS-8; VAS-9/GP-13; TP-3; MW-210; the LNAPL; and all OU1 UST areas. These areas will need to be fully evaluated to determine whether excavation and/or treatment are warranted consistent with EPA policy and guidance.*

#### Response

The original comment was addressed as directed with the exception that "all OU1 UST areas" were not included in the discussion of potential hotspots as these areas have all been investigated by CRA or others and principal threat wastes were not identified. USEPA's August 8, 2011 comment requests significant additional detail beyond that requested in USEPA's original comment and discussed and agreed upon during the March and April 2011 conference calls.



USEPA Comment No. 98

*Comment was not addressed as requested, results unacceptable. CRA added a sentence describing which geophysical anomalies they plan to investigate. Although these anomalies are shown on Figure 1.31, the planned investigations are not overlain on a figure showing the geophysical results. Also, as mentioned in an earlier comment, the geophysical results map should identify areas where geophysical surveys were not performed.*

*There are several other magnetic anomalies in the Central Parcels that CRA has not recommended investigating, for example, the elongated anomalies between TP-4 and GP02-09. These anomalies are mentioned on page 32, where it is stated that "the two large distinct anomalies identified as part of the field magnetic survey area consistent with foundry sand and slag, which were identified at depth in this area of the Site, and are consistent in location and orientation with former access roads shown in the 1954 and 1960 aerial photographs of the Site." CRA states that TP-4, TT-3 and VAS-11 were installed in and around the two large anomalies. However, none of these sampling locations is located in the magnetic anomalies. These anomalies represent the largest anomalies identified by the total field magnetic survey on the Site, and as stated in the comment, CRA's interpretation of these anomalies must be verified through test pit investigations.*

*(ORIGINAL COMMENT) Page 47, Geophysical Anomalies. Please indicate which OU1 geophysical anomalies CRA currently plans to investigate and characterize further during remedial design to determine whether excavation or treatment of the material is warranted consistent with EPA policy and guidance. The specific locations should be shown as an overlay on the geophysical survey results. Areas where CRA believes anomalies are due to rebar, concrete, or scrap metal, or something other than drums, must be verified in the field through actual test pit investigations.*

Response

USEPA's original comment requested that CRA show specific locations on the geophysical survey. The locations that CRA proposed to investigate are provided on the Data Gaps figure (Figure 1.31) and correspond in shape and size to the corresponding locations shown on the geophysical survey. USEPA's August 8, 2011 comment requests that the Respondents show the proposed investigation locations on the geophysical survey, which is different than USEPA's original request.

The Respondents can address this comment if necessary.





USEPA Comment No. 99

*Comment was not addressed as requested, results unacceptable. The main revision made to this section is that "the proposed remedies are designed to protect receptors from direct contact exposure risks, understanding the background metals concentrations may provide additional data to help determine the extent of the site requiring capping (i.e., whether any soils outside the areas of solid waste placement need to be included within the cap)." Also added: "The limits of cap placement, especially north of the recreational trail on Lots 3056 and 3057, will be determined during RD."*

*Determining the extent of cap beyond the areas agreed to in the dispute resolution settlement is to be based on whether or not solid waste is present in these areas, which appear to be a continuation of the landfill embankment. For example, solid waste was identified in MW-229, and the area northwest of the recreational trail is also significantly elevated above the surrounding low-lying floodplain area and seems to have a high potential to be constructed of solid waste material, similar to the rest of the embankments. The purpose of the RD investigation was to determine whether or not these materials should be capped with the rest of the landfill prior to construction, which would seem to be more cost effective. If the materials are not capped, determining whether these materials need to be remediated as part of OU2 will require more than a background metals study, as mentioned in the comment. A systematic sampling program for all COCs (not just metals) would be required to support quantitative human health and ecological risk assessments to determine whether there are areas outside the presumptive remedy that also need to be addressed.*

*July 2010 Comment 70 Not Fully Addressed in Background Metals Concentrations on Page 47. Please revise as requested. How will background metals samples be used in the OU1 presumptive remedy? Page 24, Background Metals Concentrations: The concentrations of lead driving the direct contact risks at the site - as high as 17,700 mg/Kg - are not due to background concentrations. And the containment remedy is supported by other pathways as well (e.g., contaminant migration to groundwater, landfill materials in GMR floodplain). Are there some areas of the landfill where CRA intends to conduct intensive, systematic sampling to support a quantitative risk assessment showing a specific area of the landfill may not require containment? If this is the case, then background metals concentrations may be relevant. Please explain with more specific information (e.g., what properties does CRA plan to reassess, etc.) or delete this as a data gap. Background concentrations for soil in GMR floodplain areas is appropriate, but this will be addressed in OU2.*

Response

The Respondents and USEPA discussed this comment during the Dispute Resolution process and the March and April 2011 conference calls. The Respondents explained that the goal of the background metals study was not to exclude areas containing solid waste from the cap but rather to provide a benchmark to evaluate soils (as opposed to solid waste) outside of the proposed cap boundary that might require capping due to anthropogenic metals



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

26

Reference No. 038443-89

contamination at concentrations that pose an unacceptable direct contact risk and be greater than naturally occurring background concentrations. This is clearly stated in the OU1 RI/FS Report where the goal of the background metals analysis is stated as to determine "whether any soils outside of the areas of solid waste placement need to be included within the cap".

During the March and April 2011 conference calls, USEPA requested that CRA include the statement that "[t]he limits of cap placement, especially north of the recreational trail on Lots 3056 and 3057, will be determined during RD." This statement refers to the potential for solid waste to have been placed beyond the current limits of OU1 as agreed to during the Dispute Resolution Agreement. This statement does not refer to the background metals study and was inserted at USEPA's request.

USEPA Comment No. 106

*Not addressed and unacceptable. The text in Section 1.2.3, page 51, first bullet states, "Waste material was accepted at the Site for over 50 years from the early 1940s until 1996; however, as records prior to 1969 are incomplete, the exact types and quantities are not known" does not match the statement that was retained which says "...the Site operated as a landfill, accepting ~~non-hazardous~~ fill and waste materials." Please delete 'non-hazardous' (as shown above) which gives the impression that the site only accepted non-hazardous fill and waste materials. This is clearly not the case as presented later in Section 1.2.3.*

*(ORIGINAL COMMENT) Page 60, Paragraph 4, Sentence 1: Change "...the Site operated as a landfill, accepting non-hazardous fill and waste materials" to reflect what has actually been seen through Site investigations, including LNAPL, USTs, drums and RCRA hazardous waste.*

Response

USEPA's comment is unclear. The Respondents stated that "the exact types and quantities [of waste material] are not known" and then proceed in the following two bullets to identify the types of waste that have been identified through the RI. The sentence stating that the "Site operated as a landfill, accepting non-hazardous fill and waste..." does not appear in Section 1.2.3. In Section 2.2.2, the Respondents note that the Site operated as a landfill, accepting non-hazardous fill and waste materials. The term non-hazardous applies to the "fill" material and does not necessarily apply to the waste. The OU1 RI/FS defines the terms waste and fill and does not use them interchangeably. The subsequent discussion regarding the presence of areas where TCLP concentrations in waste samples were greater than the TCLP criteria and the numerous mentions of the presence of areas of potential hazardous waste throughout the remainder of the document make this abundantly clear.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

27

Reference No. 038443-89

The Respondents note that material is only hazardous waste if it possesses a hazardous waste characteristic and is exhumed for management or disposal.

USEPA Comment No. 108

*Comment was not addressed as requested, results unacceptable. CRA added some detailed results of TCLP sampling; however, CRA did not remove the statement "There is also evidence of small isolated areas of the Site where TCLP concentrations in soil/waste samples were greater than the applicable TCLP criteria." Given the limited TCLP sampling, that statement is still not defensible, even with more detail regarding the sampling results presented. There is insufficient data to evaluate the extent of hazardous waste in the landfill.*

(ORIGINAL COMMENT) Page 60, Paragraph 4, Line 8: See previous comments. Since CRA only collected 5 samples for TCLP analysis from the 80-acre landfill and did not investigate the nature and extent of the TCLP characteristic hazardous waste that was found any further; and since 2 of the samples that were hazardous were composite samples taken from materials 200-300 feet apart and 350 to 1,350 feet apart, the statement "There is also evidence of small isolated areas of the Site where TCLP concentrations in soil/waste samples were greater than the applicable TCLP criteria" is not defensible and must be revised to indicate where the material was found and to clarify that the extent of the hazardous waste was not determined.

Response

The statement can be removed. USEPA's comment, however, is not precisely correct. In-situ material in the landfill is not hazardous waste.

USEPA Comment No. 117[1]

*Not addressed and unacceptable.*

*(a) The introductory paragraph of Section 2.3 states "CRA has developed general response actions for each of the six media of interest identified in Section 1.2.4 (i.e., soil, waste, and fill; NAPL; leachate seeps to surface; LFG) consistent with the RAOs." Section 1.2.4. has a different media of interest list - soil, waste, fill, LFG, soil vapor, and groundwater. Sediment and surface water is not included in this list, although these are present in both the large and small ponds. The list should also reflect Section 2.2.2 that breaks out the media as: relatively low-level threat soil, waste, and fill; hot spots containing principal threat waste (i.e., waste that warrants excavation or treatment consistent with USEPA policy and guidance (e.g., free-phase LNAPL, drums containing liquid or hazardous waste; other principal threat waste that meets the conditions for warranting excavation or treatment indicated in USEPA 1993);*



*leachate seeps discharging to surface; LFG; soil vapor. Therefore, looking at all these lists the media of interest are: Low level threat soil, waste, and fill; principal threat soil, waste, and fill including NAPL, drums with liquids or hazardous waste, soil exceeding TCLP concentrations, etc.; leachate; soil vapor; LFG, sediment, surface water, and groundwater. Add a sentence stating that soil, waste, fill, surface water, and sediment outside of OUI, and groundwater, are being addressed as part of OU2 along with LFG and soil vapor that may be present outside of the currently demarcated zones in Figure 2.3. Figure 2.3 correctly states, "boundary may be expanded during RD and OU2 RI/FS"; add this language to the text.*

*(b) The introductory text states that six general response actions have been identified but eight are described in the subsequent text (No Action, Institutional Controls, Containment Actions, Excavation Actions, Extraction Actions, Treatment Actions, Disposal Actions, and Other Actions) and nine are presented in the list at the end of Section 2.3 (No Action, Institutional Controls, Containment Actions, Excavation Actions, Extraction Actions, Treatment Actions, Disposal Actions, Physical/Chemical/Biological Actions, and Other Actions). Make the Section consistent to include the eight GRAs listed in the text and make Physical/Chemical/Biological Actions subsets of Treatment Actions.*

*(c) The examples included in the definition of Other Actions includes GRAs that are already listed as a bulleted item (i.e., in-situ mentioned under Treatment Actions and disposal mentioned under Disposal Actions) - remove the duplicate GRAs. Change the text to "Other actions may be undertaken to achieve RAOs; and may include remedial technology types such as in-situ treatment, together with on-site or off-site discharge/disposal. These actions may become apparent during RD or the OU2 RI/FS."*

*(d) The last sentence of Section 2.3 states that seven media of interest are addressed when only six are listed. Match the list as described in (a) above.*

*(e) In the list at the end of Section 2.3, change the category for Other to include all media of interest.*

*(f) Table 2.2, which is referenced in this Section, only contains six media of interest (waste, fill, soil, NAPL, leachate, LFG). Match the list in (a) above for inclusion in Table 2.2.*

*Page 63, Section 2.3, General Response Actions. Please revise this section to include the specific general response actions for each media to be addressed, including the large volume of relatively low-level threat material that the solid waste containment remedy applies to; and liquid waste, drums containing liquid or hazardous waste, and other principal threat waste that warrants excavation or removal consistent with EPA 1993, that may be encountered when these areas are investigated during remedial design, that the solid waste containment remedy does not address. See previous Comments, including Comments 104, 108, 110 and 114.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

29

Reference No. 038443-89

Response

This is a new comment. The Respondents can address this comment if required.

USEPA Comment No. 117[2]

*Additional comments have been made on Section 2.3, revise the section to address the new comments.*

*(ORIGINAL COMMENT) Section 2.4, Identification and Screening of Technology Types and Process Options, Pages 64 to 70. This section will need to be rewritten to address previous comments.*

Response

This is a new comment. The Respondents can address this comment if required.

USEPA Comment No. 119

*Not addressed and unacceptable. The added figure is unacceptable. In Figure 2.1, the arrows that should be showing pressure on the cap are shown exerting equal pressure on the ground surface near the GMR not on the cap. The figure needs to show pressure on the cap and it should also show soil gas movement beneath the cap that is expected during flood events. The figure shows the March 2011 flood event and, unless the March 2011 flood event was a 100-year flood, the figure should show what the 100-year flood would look like when the cap is in place. LFG and soil gas will escape through LFG vents and along Dryden Road when groundwater is rising. The cap will draw in air, from which oxygen may be a problem, when groundwater is falling.*

*Pages 65 to 66, Landfill Cap: There needs to be a discussion within the document of potential hydrostatic uplift and of venting due to communication with rising and falling groundwater levels. A conceptual cap illustration must be used to show how flood events would impact the cap. It should be shown where the cap lies within the 100-year floodplain and the 100-year floodway, as well as other, more frequent flood elevations, including the flood observed this year which appears to be an annual or bi-annual event. Please revise*

Response

CRA stated that the associated figures are for conceptual purposes, and that actual design of the cap including the topography, and hence the impact of floods of varying return periods, would be determined during RD. CRA would need to complete a "cut and fill" balance to determine the ultimate slope and topography of the caps. CRA provided the 100-year flood and floodway



elevations with respect to the OU1 on Figure 1.3 and the 10- and 50-year flood elevations on Figure 1.5. As the limits of the capped area are the same as the limits of OU1, it is not clear what additional information USEPA requires at this stage as design details for the cap will be the subject of RD.

USEPA Comment No. 120

*Not addressed and unacceptable. The included figures do not realistically show what a final cap will look like. No plan figure with anticipated topography is shown and Figure 2.1 shows a section of the cap that is 25 to 30 feet above ground surface near the large and small ponds that are still being discussed as retention ponds after cap construction. It is not known how the statement in Section 2.4.2.1 stating, "Large Pond and Small Pond would be backfilled with clean soil to the water table and graded to use for stormwater management. In accordance with OAC 3745 27-08(D)(3), the Large Pond and Small Pond would be modified to operate as stormwater retention ponds..." (page 88, first paragraph) can be implemented based on the included figure. The use of the ponds for stormwater retention is reiterated throughout Section 3.0 and 4.0. One such example is Section 3.1 which states, "Therefore, channels would ultimately direct excess stormwater to stormwater retention ponds (i.e., the Large Pond and Small Pond), before discharging to the municipal stormwater system. The locations and capacity of these channels will be determined during the remedial design stage." If the planned approach stated in Section 1.2.3 "fill to the water table with clean material prior to capping" is implemented then it is unknown why any discussion of the ponds is even included since they will no longer exist. The large and small pond are also discussed as part of the stormwater runoff system in Section 4.2.2, page 125, last paragraph and Section 4.2.3, page 135, fifth paragraph. Remove all references to the large and small pond being used for stormwater control under the capping alternatives.*

*Include a plan view of the cap with topography and base the section drawing off the anticipated cap design. Show conceptual stormwater controls on the plan drawing but do not include features that will no longer exist following cap construction.*

*(ORIGINAL COMMENT) Page 65-66, Landfill Cap: Conceptual drawings of the capping alternatives must be included. The drawings must also show how the various sloping options and embankments for the capping alternatives will look topographically and in cross-sections.*

Response

CRA stated that associated figures are for conceptual purposes, and that actual design of the cap over the embankment and drainage would be determined during RD. It was not CRA's intention to show what a final cap would look like, as to do this accurately, CRA would have needed to complete detailed modeling and design that goes beyond what is typically needed for a FS.



USEPA Comment No. 124

*Not addressed and unacceptable.*

*(a) For monitoring, the text states, "For conceptual purposes, the minimum locations where explosive gas alarms and monitors/punch bar stations along with the locations of passive vents would be installed are shown on Figure 2.3." There is no labeling on the drawing that denotes whether punch bar locations or permanent monitoring stations will be used and at which locations. OAC 3745-27-12 does state that a punch bar may only be used if the explosive gas pathway does not represent a potential hazard to an occupied structure. Also, according to OAC 3745-27-12, "occupied structure" means an enclosed structure where one or more human beings may be present, but does not include structures that are open to natural free air circulation such that the explosive gas hazard is minimized. None of the trailers have been marked for monitoring; this leads to the assumption that they all have natural free air movement beneath them. The trailers need to be individually inspected and documented for conditions that can trap LFG beneath the structure. If there is no natural free air movement beneath a trailer then monitoring must occur. Any trailer that currently has natural free air movement must have the occupants informed that they are not in the monitoring program. Institutional controls must be developed that deal with the possibility of new trailers or remodeled trailers to prevent the loss of natural free air movement.*

*(b) For venting, the text states, "The passive vents will, therefore, be installed in discrete locations where methane has previously been measured at concentrations greater than the 100 percent of the LEL (or 5 percent methane by volume). Specifically, this will include GP01-09, GP02-09, GP04-09, GP18-09, and GP21-09." Figure 2.3 does not show a vent location for GP18-09. Additionally, no monitoring locations are shown along the site boundary with the GMR. OAC 3745-27-12 requires facilities that accepted waste after 1994 to include "Permanent monitors or punch bar stations in such locations and in such numbers that explosive gas migration through the unconsolidated stratigraphic unit or fractured bedrock pathway towards the facility boundary will be detected."*

*(ORIGINAL COMMENT) Section 2.4.2.2, Monitoring and Passive Venting of LFG, Page 67, Paragraph 3: The text states that passive LFG vents will be installed in discrete locations where methane has been previously measured at 100 percent of the LEL. There are 5 locations listed for passive vents, the cost estimate includes 20 vents. Even if this approach seemed reasonable, there are two locations that had levels close to 5%, GP13-09 and GP16-09, which are likely to see increased levels of methane once a cap is in place. However, the real method for determining where passive LFG vents shall be placed should involve a screening process undertaken during the remedial design process. The Dispute Resolution Agreement stated, "The alternative descriptions of the passive landfill gas system in the revised OU1 FS Report shall include, but not be limited to, information concerning the type, configuration, and locations of each system evaluated, including potential monitoring points, with the final details to be determined as part of the remedial design process." The Streamlined RI/FS previously stated in Section 1.2.3.1 under*



*LFG and Soil Vapor, "However, empirical data should be collected to confirm the modeled predictions with respect to LFG and to assess soil vapor migration." The last paragraph in this section does say that there will be ongoing explosive gas monitoring, but this is only near buildings/structures. The report also says "exact number and locations of passive vents will be determined during RD and modified as needed in the future based on results of ongoing monitoring." Once the cap is placed there will be no ongoing monitoring except at the few vent locations due to the valid concern of destroying the cap integrity. Additionally, the monitoring should not be done when groundwater levels are falling because fresh air will be drawn into the subsurface. The most dangerous period for surrounding structures is when the groundwater is rising and pushing LFG upward. Please revise.*

**Response**

The landfill gas (LFG) vent locations shown on Figure 2.3 are conceptual. A decision as to whether punch bars or permanent monitors are appropriate for a given location will be made during RD when final details regarding the cap extents and distance to receptors are known. As stated by USEPA in its original comment above, the Dispute Resolution Agreement stated,

*The alternative descriptions of the passive landfill gas system in the revised OU1 FS Report shall include, but not be limited to, information concerning the type, configuration, and locations of each system evaluated, including potential monitoring points, with the final details to be determined as part of the remedial design process.*

The information provided by the Respondents in the OU1 RI/FS report is consistent with the requirements of the Dispute Resolution Agreement.

**USEPA Comment No. 126**

*Addressed with additional text unacceptable.*

*(a) CRA states that sub-slab monitoring locations will be determined as part of the VI Study which addresses the original comment; however, added text and figures need revisions. Figure 2.5 was added to show a conceptual sub-slab venting system; the figure is labeled "Typical Sub-Slab Depressurization" and should be labeled as conceptual. The figure must label the fan "optional" since the text states, "The need for a vapor mitigation system and the determination for whether active or passive venting would be more appropriate will be discussed with USEPA following completion of the work proposed in CRA's VI Work Plan."*

*(b) A visual indication (manometer) must be included for occupants to easily verify that an active system is maintaining sub-slab vacuum.*





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

33

Reference No. 038443-89

*(c) The second paragraph on page 100 should be changed so that it does not represent venting as treatment and to address the disadvantages of drawing LFG toward structures. Change the text to the following, "Active venting is fairly easily implemented and is a technology that can be readily implemented in existing buildings. Active venting (such as sub-slab depressurization) uses a fan to continually draw air from the sub-slab and to exhaust to the atmosphere. An advantage of an active ~~treatment venting~~ is that it can be more reliable at ensuring that soil vapor is continually vented to the atmosphere. A disadvantage near a landfill, especially one without an active LFG collection system, is that it draws LFG and soil vapor toward occupied structures and that it will not operate if system power or mechanical failure occurs."*

*(ORIGINAL COMMENT) Page 68, Section 2.4.2.3, Soil Vapor, Paragraph 3. Include sub-slab venting locations in the monitoring program that is established.*

#### Response

The Respondents addressed the original comment and USEPA has provided additional comments. The level of detail requested by USEPA is excessive for a conceptual drawing; however, the changes are relatively minor.

The request by USEPA to state that active sub-slab venting system has the disadvantage of drawing LFG and soil vapor toward a structure significantly overstates the risk associated with such systems, which are sized just to depressurize the highly porous granular area beneath the floor slab and do not exert a significant draw through native soil.

#### USEPA Comment No. 127

*Addressed as directed. Note: The added text states, "Monitoring of the soil vapor will continue on a quarterly basis beyond the initial 2 years, so long as the threat of exposure remains present. If it becomes apparent, based on building use or based on analytical data that there are no substantial risks from exposure to soil vapor, the frequency may be decreased (pending Ohio EPA and USEPA approval), following the initial 2 years." CRA's response to comments says monitoring frequency will be decreased to semi-annually if there is no identified threat to receptors following two years. Address this discrepancy.*

*(ORIGINAL COMMENT) Page 68, Soil Vapor: O&M will need to continue longer than two years. The length of time could be as long as the landfill cap is in place, since even with the additional investigations to address principal threat waste, unidentified sources of methane and VOCs could remain in the landfill material and in groundwater for a long time. The O&M will need to continue until it is demonstrated that contaminant concentrations will remain below acceptable risk levels on a permanent basis. Please revise.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

34

Reference No. 038443-89

### Response

The text in the OU1 RI/FS Report (CRA, June 2011) is correct. The text in CRA's response to comments (CRA, June 17, 2011) is not inconsistent with the text in the OU1 RI/FS Report as, if a reduction in monitoring were deemed appropriate, the most defensible monitoring period would be semi-annual as it would allow for monitoring during distinct seasons.

### USEPA Comment No. 128

*Addressed as directed. Note: The last paragraph in Section 2.4.2.4, states, "With respect to the definition of leachate, consistent with USEPA's Terms of Environment, CRA will also monitor the groundwater to assess for potential contaminants resulting from contact with waste or contaminated non-native soil material. Details of this will be provided in the OU2 RI/FS." Add surface water and sediment monitoring since waste placement occurred below the level of these media of concern.*

(ORIGINAL COMMENT) Page 68, Section 2.4.2.4, Leachate Monitoring: This section will need to be revised to address previous comments, especially concerning the potential for leachate generation along the GMR and Quarry Pond Embankments during flood events.

### Response

Surface water and sediment in the GMR and Quarry Pond will be investigated during the OU2 RI/FS. If no contamination originating from the Site is identified in the surface water or sediment and, the groundwater between OU1 and the surface water and sediment locations in question is not impacted, continued monitoring will not be necessary.

### USEPA Comment No. 129

*Addressed as directed. Note: Lines 4 and 5 on Page 101 should be revised to read: "CRA understands that Valley Asphalt is not connected to the municipal water supply.*

(ORIGINAL COMMENT) Page 69, Section 2.4.2.5, Valley Asphalt Wells: As with LFG, the Valley Asphalt wells will need to be monitored on a quarterly basis until it is demonstrated that contaminant concentrations in the wells will remain below risk-based levels and MCLs on a permanent basis. Also, it is likely that the wells will need to continue to be monitored on some periodic basis after that as part of the statutory five year review process.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

35

Reference No. 038443-89

#### Response

The original comment was addressed. USEPA's additional comment is incorrect. Through electronic mail correspondence to CRA, dated April 14, 2010, Mr. Dan Crago of Valley Asphalt stated the office linked to the first Valley Asphalt well was closed, and all on-site well water is limited to non-potable uses.

During the Building Physical Survey completed in June 2011 by representatives for the Respondents, Ohio EPA, and CH2M Hill, USEPA's oversight consultant, it was confirmed that two of the seven Valley Asphalt buildings are serviced with municipal water, four are not connected to any water or sewer service, and one building is connected to the on-Site well for non-potable uses.

#### USEPA Comment No. 130

*Addressed as directed in Section 2.4.2.6. Note: Change the following sentence: "Signs will be placed around the Site perimeter that will be visible from all ~~access roads~~ access points (roads and trails)." Also, please note that the term hoarding is not typically used in the U.S. and will likely draw questions from the general public. Please provide some clarification as to the meaning of this term in parenthesis.*

*(ORIGINAL COMMENT) Page 69, Section 2.4.2.8, Engineering Controls: Make it clear where temporary and permanent fencing would and would not be considered for use, especially since part of OU1 is occupied by businesses and the GMR recreational trail, and currently vacant areas may one day be redeveloped. If this section is only discussing temporary fencing, then make it clear.*

#### Response

Original comment was addressed. This additional comment is new and requests a minor wording change. No response is required.

#### USEPA Comment No. 131

*Addressed as directed.*

*Additional Comment on Page 70 not part of a previous review comment:*

*Page 70, second paragraph: The statement that "Although several Site COCs are present at concentrations greater than applicable criteria in shallow soil samples, the concentrations of deeper soil samples (closer to the water table) are generally smaller with increasing depth, indicating that*



*contaminants do not pose a risk to groundwater" is incorrect for two reasons. First, leaching could occur from the shallower soils that exceed the applicable soil criteria, resulting in dissolved concentrations exceeding groundwater criteria migrating down to the water table. Although the deeper soil samples don't exceed the applicable soil criteria, the soil analyses are not sensitive enough in some cases to detect the presence of water containing dissolved COCs exceeding groundwater criteria. For example, the MCL for arsenic is 10 ug/L; leached arsenic (greater than the MCL) migrating downward through the deeper soils would not be detected in the deeper soil samples if less than part-per-million concentrations. Shallow soils exceeding the applicable criteria for some COCs are a threat to groundwater regardless of the concentrations in deeper soil samples. Second, the soils and wastes have not been characterized sufficiently to make a statement that contaminants do not pose a threat to groundwater. This statement must be removed.*

*(ORIGINAL COMMENT) Section 2.4.2.9, Institutional Controls, Page 70: Delete these paragraphs and add a discussion on the Ohio Environmental Covenants Act.*

Response

The Respondents addressed the original comment. It is unclear how the new USEPA comment is related to the original comment as they reference different sections of the report. The USEPA comment regarding leaching of contaminants to groundwater from shallow soils in the absence of contamination in the deeper vadose zone soils overstates the risk and ignores the science behind the USEPA Soil Screening Levels (SSLs), which CRA previously detailed in response to USEPA Comment No. 77.

Application of SSLs that were designed to be protective of residential exposures is not appropriate. The significant groundwater data for the Site are the appropriate point of comparison for assessing groundwater impacts.

USEPA Comment No. 132

*Addressed as directed. Note: The response to comments states that CRA revised the text as requested, which gives the impression that it addresses the original comment, when in reality the text was revised based on the email dated April 12, 2011.*

*(a) The text on page 107 states "Additional contingency measures may include increased thickness in some areas, or to cover the MatCon cap with a layer of conventional asphalt, for example in high traffic areas on the Valley Asphalt property." If a conventional asphalt is placed on top of the MatCon cap, then inspections of the MatCon surface will need to be addressed.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

37

Reference No. 038443-89

(ORIGINAL COMMENT) *Section 3.0, Development of Alternatives: Please revise this section consistent with previous comments on Section 2; and to include three capping alternatives: MatCon 1.5 percent slope/OEPA SW 3 percent slope; OU-wide OEPA SW 3 percent slope; and OU-wide OEPA SW 5 percent slope (baseline).*

*A variance will be needed for slopes other than 5 percent. An ARARs waiver will be needed for the MatCon material. The HELP model must be run for each alternative to help support the technical equivalency ARARs waiver. Additional comments on CRA's HELP model are in Attachment 2, and must be addressed throughout the report. The report must also indicate that the slope for the SW cap will be minimized as much as possible based on the results of a stability analysis to be conducted during remedial design, to allow for future use of the property that is compatible with the cap.*

#### Response

The Respondents addressed the original comment. The details requested by USEPA in the new comment are more appropriate for RD and appear to be intended to reduce the perception of the implementability of the MatCon cap.

Cracks in the MatCon cap would be expected to originate from one of two primary mechanisms. Deterioration of the binder in the uppermost asphalt surface due to weathering and ultraviolet light degradation could result in cracks that would originate at the uppermost surface of the exposed asphalt (be it MatCon or conventional asphalt) and propagate slowly downwards over time. Differential settlement could result in cracks that would potentially start from the bottom of the MatCon asphalt cap but which would propagate through the MatCon and conventional asphalt and would result in cracks in the conventional asphalt quickly due to its lower resistance to cracking. In either event, the deterioration would be readily apparent in the conventional asphalt layer either before or at the same time as the integrity of the underlying MatCon was compromised and would allow for timely repair. No special inspection requirements are therefore warranted in the event that an overlying layer of conventional asphalt is required.

#### USEPA Comment No. 135

*Addressed with additional text unacceptable. Text was added that states tying together of the OEPA MSW and MatCon caps would be part of the remedial design; however, a conceptual drawing could not be provided since it is stated as proprietary and MatCon does not provide details. Approval of the remedial design will be dependent on knowing the details of the cap design, if details cannot be provided then an alternate method of tying the two caps together must be provided.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

38

Reference No. 038443-89

(ORIGINAL COMMENT) *Section 3.2.2, Alternative 2, Asphalt and SW Caps, Page 75. MatCon has a proprietary design whereby the edge of an HDPE membrane could be tied to the MatCon by sandwiching it between two layers of MatCon, thus providing a continuous cap without special anchors. ([http://www.matcon-inc.com/FAQ.htm#Can MatCon be used in conjunction with conventional geomembranes?](http://www.matcon-inc.com/FAQ.htm#Can_MatCon_be_used_in_conjunction_with_conventional_geomembranes?)) Provide a description and conceptual detail drawing of this.*

Response

The Respondents addressed the original comment. As indicated in USEPA's original comment, the comment was sourced directly from the frequently asked questions of the MatCon website. CRA added discussion for conceptual purposes, based directly on MatCon's published response to that question. The revisions are included in Section 3.1 of the OU1 RI/FS. CRA has discussed the requirements with MatCon and MatCon has agreed to provide a typical design detail. The Respondents will provide this information to USEPA when it is received.

USEPA Comment No. 136

*Addressed as directed. Note: The text states, "Additional contingency measures may include increased thickness in some areas, or to cover the MatCon cap with a layer of conventional asphalt, for example in high traffic areas on the Valley Asphalt property." Figure 3.1, does not include any indication that the MatCon cap will be thicker in some areas of the site. Add a statement on the figure that points out the additional thickness that may be necessary.*

(ORIGINAL COMMENT) *Section 3.2.2, Alternative 2, Asphalt and SW Caps, Page 75. For point loads on a 4" MatCon cap as generally constructed, the maximum is 100 psi. ([http://www.matcon-inc.com/FAQ.htm#What is the load limitation for MatCon?](http://www.matcon-inc.com/FAQ.htm#What_is_the_load_limitation_for_MatCon?)) State what load limits the MatCon cap will be subjected to based on the anticipated traffic and state that this will be calculated again and finalized during the design phase along with other design parameters required for obtaining the MatCon warranty. What is the maximum load that MatCon can be built to withstand due to the loads at Valley Asphalt? Describe how Valley Asphalt will be required to operate their equipment and pile height to meet the restrictions that will be placed on them to protect the cap. B&G Trucking and Barnett Construction can also have heavy equipment traffic. Please address*

Response

The Respondents addressed the original comment. It is not clear what additional value a note on the figure would have when the information is provided in the text; however, the change is minor and no further response is warranted.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

39

Reference No. 038443-89

USEPA Comment No. 138

*Addressed as directed. Note: The last sentence in Section 3.2.2, page 118, fifth paragraph is incomplete, "To ensure the warranty of the MatCon Cap, MatCon personnel would participate in the cap". Please complete this sentence.*

(ORIGINAL COMMENT) Section 3.2.2, Alternative 2, Asphalt and SW Caps, Page 75: Describe who is responsible for inspection, repairing, and maintenance of the MatCon and the life span of the product. Describe how pavement striping can affect the surface and what controls will be put in place to prevent damage from this or other actions by onsite businesses.

Response

The sentence should be corrected as follows: "To ensure the warranty of the MatCon Cap, MatCon personnel would participate in the design and construction of the cap".

USEPA Comment No. 139

*Not addressed and unacceptable. Tying the MatCon cap into the road base will not prevent LFG from migrating off site, the purpose would be to take away some of the preferential pathways. Change the text as follows, "Similarly, at the Site boundaries, a HDPE membrane will be tied from the layers of the MatCon Cap to below the road base of Dryden Road (~~approximately 12 inches the depth will be determined during design~~) to prevent any LFG from migrating from the Site remove preferential pathways to offsite migration."*

(ORIGINAL COMMENT) Section 3.2.2, Alternative 2, Asphalt and SW Caps, Page 75: Discuss how the asphalt cap will tie into Dryden Road to prevent LFG from traveling through road base materials and the backfill of utility trenches.

Response

The detail requested in USEPA's original comment is more appropriate for the RD stage. The additional comment requires a minor wording change only and no further response is warranted.

USEPA Comment No. 140

*Addressed as directed. Note: CRA needs to mention that the portion of the site with a SW cap will also require a variance with respect to slope (proposed at less than 5%).*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

40

Reference No. 038443-89

(ORIGINAL COMMENT) *Section 3.2.2, Alternative 2, Variance/Waivers, Page 75, Last Paragraph: Change the last sentence that reads, "CRA would also request a variance/waiver to reduce the required minimum slope to one percent" to indicate that it is only the asphalt cap that is being discussed and revise the slope to 1.5 percent.*

**Response**

Concur.

**USEPA Comment No. 143**

*Not addressed and unacceptable. The volume of stormwater generated under each alternative was not presented. Determine the amount of stormwater under each alternative to allow comparison to be made.*

(ORIGINAL COMMENT) *Section 3, General. Discuss stormwater runoff under all alternatives and how much will be present based on modeling. Also discuss what compliance with ARARs will require, i.e. NPDES permit, sedimentation basin, etc.*

**Response**

The Respondents had provided additional conceptual details as requested in the most recent version of the OU1 RI/FS (CRA, June 2011). CRA had already completed HELP modeling and has presented the values as 'percent of precipitation shed'. Based on the results of the HELP model, Alternative 2 will effectively shed approximately 99.7 percent (average) over precipitation, while Alternative 3 would shed approximately 99.9 percent. USEPA's requirement that detailed calculations be completed during the RI/FS stage is inconsistent with the RI/FS Guidance and the additional detail is not necessary for a comparison of the alternatives using the nine criteria.

The Respondents discussed the proposed changes with USEPA during the March and April 2011 conference calls and believed that agreement had been reached with respect to the changes to be made to this portion of the OU1 RI/FS Report. USEPA has reverted to its original position and is again requesting details that are more appropriate for RD.

**USEPA Comment No. 144**

*Addressed as directed. Note: The text states, "For conceptual purposes, the LFG venting system will include either, or a combination of, passive vents with turbine outlets or passive vents with gooseneck*





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

41

Reference No. 038443-89

outlets." Figure 2.4 only shows a passive vent with turbine outlet, include a note on the figure stating that a gooseneck outlet is possible or also show the optional gooseneck configuration in the figure.

(ORIGINAL COMMENT) Section 3, General. Consistent with RAOs, this section must be revised to discuss treatment options for the LFG gas being vented from the cap. This may be required by ARARs, and would also be consistent with EPA's Principles for Greener Cleanups cited later in the report (e.g., greenhouse gas emissions). Also, discuss methods to prevent oxygen from entering the landfill when groundwater levels beneath the cap are falling and create vacuum conditions.

#### Response

Original comment was addressed. The additional comment requires a minor change to a figure, so no response is required.

#### USEPA Comment No. 146

Not addressed and unacceptable. The added figure is unacceptable. The figure shows the March 2011 flood event, but should also show what the 100-year flood would look like when the cap is in place. The figure does not show a line around the elevations as detailed in the comment below or where they would fall along the slide slope in the capping cross-sections. No figure showing the cap tie-in to the Quarry Pond has been provided.

July 2010 Comment 117 Not Addressed in Section 4.2, Individual Analysis of Alternatives, Pages 79 to 87. This comment must be addressed as previously requested.

(ORIGINAL COMMENT) Section 4.2, Detailed Analysis of Remedial Alternatives, Including All Subsections and Alternatives, Pages 88 to 124: For the asphalt and ARARs-compliant solid waste cap remedial components, please provide additional, specific, accurate and defensible details, including cross-sections, as to what the cap will look like over the steep embankments in the GMR floodway that are comprised of landfill material, and what the cap will look like over the steep landfill material embankments of the Quarry Pond (at least on east, north and west sides of Quarry Pond). The details must include information about what regrading is needed; whether some amount of landfill material in the GMR and Quarry Pond embankments needs to be excavated out and replaced with clean fill before being capped; and what additional measures will be needed since the landfill materials that constitute the GMR embankment are in the GMR Floodway, as well as the 100 year floodway and the 100 year floodplain, and since the Quarry Pond embankments (and other parts of the landfill) are also in the 100 year floodplain. Also, please include additional information as to how the waivers-justifiable asphalt caps would be "tied" into the ARARs-compliant solid waste cap; and how the solid waste cap over the unsubmerged landfilled materials in the Quarry Pond and unsubmerged part of the embankments of the



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

42

Reference No. 038443-89

*Quarry would "tie" into the remedial components for submerged landfill materials and contaminated sediments in the Quarry Pond. Also ARARs associated with any of these issues must also be discussed.*

*According to the RI/FS Work Plan, various flood elevations applicable to the Site are:*

*Normal Pool: Elevation North of Dryden 713 ft-msl; South of Quarry Pond 709 ft-msl.*

*10 Year Flood: Elevation North of Dryden 729 ft-msl; South of Quarry Pond 726 ft-msl.*

*50 Year Flood: Elevation North of Dryden 733 ft-msl; South of Quarry Pond 730 ft-msl.*

*Also, please include a figure showing a line around these elevations on the Site Survey; and show where they are in the slideslope capping cross-sections requested above. Please use the new transducer data to show approximate elevations for the flooding seen this March, which seems to be an annual or bi-annual flood event.*

#### Response

The Respondents provided additional details and figures in the revised OU1 RI/FS at the conceptual level. USEPA has indicated that the Respondents did not provide sufficient details in the report. The RI/FS process is not the RD, and thus, the FS does not include detailed cap specifications. The actual design of the cap including the topography, and hence the impact of floods of varying return periods, would be determined during RD. CRA would need to complete a "cut and fill" balance to determine the ultimate slope and topography of the caps.

CRA provided the 100-year flood and floodway elevations with respect to the OU1 area on Figure 1.3 and the 10- and 50-year flood elevations on Figure 1.5. As the limits of the capped area are the same as the limits of OU1, it is not clear what additional information USEPA requires at this stage as design details for the cap are not known.

Although CRA did not provide the design level details that USEPA required, the Respondents believe that "sufficient quantitative information to allow differentiation among alternatives with respect to effectiveness, implementability, and cost, is included in the OU1 RI/FS consistent with the RI/FS Guidance. Information necessary to support the approval of a RD is not required at this stage of the process, and as such details will inevitably change during RD as the design process unfolds, the provision of such information is an unnecessary expense and will lead to public confusion, when changes occur during the RD phase.

At the meeting on August 24, 2011, USEPA and its consultants stated that the comment actually was asking for a conceptual drawing showing how the cap might appear. USEPA stated that this was needed so that the agency could explain to others what is being evaluated.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

43

Reference No. 038443-89

This written comment is not consistent with USEPA's verbal representations at the August 24, 2011 meeting.

USEPA Comment No. 147

*Not addressed and unacceptable (due to numerous errors and misstatements).*

*Section 4.2, Individual Analysis of Alternatives, Pages 79 to 87, and Section 4.3, Comparative Analysis of Alternatives, Pages 87 to 95. These sections and subsections will need to be completely re-written consistent with previous comments, including comments concerning the media and risk pathways to be addressed, capping options, passive venting options, LFG treatment options, embankment options, material that will need to be excavated or treated, monitoring, etc, as well as OEPA's comments regarding ARARs.*

*These sections of the FS will also need to be rewritten to provide significantly more detail in sections as to how various alternatives and remedy components will meet the statutory requirement for overall protection of human health and the environment, as well as EPA's criteria for long-term effectiveness and short-term effectiveness. This analysis is especially critical for, but not limited to, options that allow current businesses to remain on-site, and which will allow for appropriate reuse over vacant areas; as well as options that will be impacted by erosion and flooding. Adjacent businesses and houses, and the GMR and recreational area adjacent to the site must also be considered. Part of this discussion should include specific details on the RAOs, and thoroughly explain how each component of the remedy alternatives being considered would or would not address each RAO. These sections will need to be rewritten to provide significantly more detail explaining what specific provisions of OEPA's ARARs will need to be waived for a MatCon cap, including the specific citation and a full text description of what OEPA's actual requirements are, and provide a lot more detail on how the MatCon cap component will meet the technical equivalency of these requirements and support a waiver.*

*Also, even though groundwater is not part of OU1, there must be a discussion on how capping of the site could make any groundwater options involving source removal, installation of additional monitoring wells, or injection treatments more difficult to implement, and what will be done to protect and repair the cap during the OU2 investigation, and, if needed, subsequent construction. This is especially true in areas where the FML is to be placed.*

Response

USEPA's comment that, the original comment was "not addressed and unacceptable due to numerous errors and misstatements" would seem to be an overstatement given the nature of the specific comments below, most of which relate to minor wording changes and some of which



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

44

Reference No. 038443-89

are incorrect. CRA has provided specific responses to each new comment below. The original May 10, 2011 comment is included above.

*(a) Correct the following sentence in Section 4.2.2, page 126, first bullet, and Section 4.2.3, page 135, fourth bullet, "Treat or eliminate high levels of hazardous substances, pollutants, or contaminants (hot spots) to the extent practicable and necessary to protect human health and the environment (if necessary)." The wording is redundant since necessary is already used.*

Response

The wording "if necessary" was specifically included at USEPA's request during the January 13, 2011 conference call between the Respondents and USEPA and confirmed in an electronic mail message from USEPA, dated January 14, 2011. The Respondents noted at the time that the wording was redundant; however, USEPA requested that it be included to provide greater certainty. However, the Respondents have no objection to the suggested change.

*(b) Correct the sentence in Section 4.2.2., page 127, third bullet, and Section 4.2.3., page 137, second bullet, "During design it will be confirmed that Valley Asphalt does not use its well as a source of potable water, and continued monitoring will be conducted until the concentrations of contaminants in this well until a statistically identified downward trend or lack of a trend in concentrations can be identified and concentrations statistically identified downward trend or a stable trend in concentrations can be identified and concentrations are below MCLs, a cancer risk of  $1 \times 10^{-4}$  or HI of 1."*

Response

Concur.

*(c) Correct the sentence in Section 4.2.2., page 128, third paragraph, "OAC 3745-27-08(C)(4)(c) -Cap shall have at least 5 percent grade in all areas except where surface water control structures are located - The MatCon Cap SW cap would have a grade of approximately 1.5 percent and the SW Cap would have a grade of approximately 3 percent minimum instead of 5 percent."*

Response

Concur.

*(d) Correct the sentence in Section 4.2.2., page 129, third paragraph, to read, "Given that the Site has not accepted waste since 1996, and that there will be little expected further decomposition of waste material settlement, a reduced slope would not is not expected to affect the performance of either the MatCon or SW Caps."*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

45

Reference No. 038443-89

Response

The sentence as written is correct as it is the decomposition of waste that would be the primary driver of differential settlement within the landfill. However, the Respondents have no objection to the suggested change.

*(e) Correct the sentence in Section 4.2.2., page 129, fourth paragraph, to read 1.5 percent slope, "Furthermore, through completion of the HELP model, the MatCon Cap with a  $\pm$ 1.5 percent slope will effectively prevent over 99 percent of precipitation from infiltrating the surface, thus demonstrating equivalent performance to the SW Cap."*

Response

Concur.

*(f) If no wetland survey has been performed then remove the conclusion already drawn in Section 4.2.2., page 129, fifth paragraph, "If they are wetlands, the Large Pond and Small Pond are low grade wetlands, and anthropogenic in nature."*

Response

A wetland survey is required to determine whether the Large and Small Ponds meet the definition of a wetland. The low grade and anthropogenic nature of the Large and Small Ponds is self-evident given that they are situated within waste in a landfill.

*(g) Correct the sentence in Section 4.2.2., page 131, second paragraph, and Section 4.2.3., page 139, last paragraph, to read, "Further investigation is still required to either confirm that the small volumes of principal threat waste will not jeopardize the overall remedy, or, if hot spots are identified, to determine an appropriate response."*

Response

The comment requires a minor change, no response required.

*(h) The following sentence in Section 4.2.2, page 131, third paragraph, "However, the MatCon does not require the same level of continuous maintenance as the SW Cap" is contradictory to CRA's response to comment #180 that states, "Rather than a complete resurfacing every 30 or 40 years, it is far more likely that small portions of the Site will require annual maintenance, thus equaling the costs of replacement every 30 or 40 years."*



Response

USEPA ignored the full response to USEPA Comment No. 180 provided in the Respondents letter, dated June 17, 2011. USEPA Comment No. 180 was with respect to Table 4.1 "Estimated Remedial Costs", and stated "Since the cost estimate only goes out 30 years, the replacement of the MatCon cap every 40 years is not fully included in the costs". The Respondents response noted that the lifespan of MatCon caps is not known, as the technology has only been used for approximately 20 years. The response stated that maintenance costs of the MatCon cap were included in the table, as the MatCon cap would likely require routine maintenance, rather than complete replacement. The Respondents stand by the referenced statement in the text.

*(i) Remove the following sentence in Section 4.2.2, page 132, first paragraph, and Section 4.2.3, page 140, fifth paragraph, "However, USEPA, 1991 states: EPA expects that few CERCLA municipal landfills will fall into this category; rather, based on the Agency's experience, the majority of sites are expected to be suitable for containment only, based on the heterogeneity of the waste, the lack of reliable information concerning disposal history, and the problems associated with excavating through refuse."*

Response

USEPA's rationale for objecting to the inclusion of a direct quote from USEPA's own guidance document is unclear given that the guidance specifically applies to municipal landfills and the Presumptive Remedy.

*(j) Correct the following sentence in Section 4.2.2, page 132, second paragraph, "With respect to short-term risks to the environment, Alternative 2 requires the removal of all existing vegetation to facilitate the installation of a SW cap over the undeveloped central portion of the Site, as opposed to maintaining the existing vegetation;..."*

Response

The text as written is correct. However, the Respondents have no objection to the suggested change.

*(k) Correct the following sentence in Section 4.2.2, page 132, second paragraph, "There will also be a temporary increase in erosion-runoff until the cap is completed due to the reduction in evapotranspiration."*

Response

The sentence as written is correct as the increase in runoff will result in increased erosion. However, the Respondents have no objection to the suggested change.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

47

Reference No. 038443-89

*(l) Replace the following sentence in Section 4.2.2, page 132, second paragraph, "Although the MatCon cap would require substantial resurfacing and repair after approximately 30 years,..." with "The MatCon Cap will require annual maintenance on small portions of the Site that is assumed to equal the costs of replacement every 30 or 40 years;..." This is based on CRA's response to comment #180.*

Response

As stated previously in the response to (h) above, USEPA has ignored the response to Comment No. 180 in its entirety.

*(m) Add the following text to the last sentence in Section 4.2.2, page 132, second paragraph, "Disturbance or exposure of the underlying waste material during resurfacing is unlikely due to the presence of the base layer between the waste and the MatCon asphalt but will potentially expose maintenance workers to LFG and/or soil vapor. Unlike surficial repairs that may be required on the SW Cap, maintenance of the MatCon Cap will also expose waste materials to stormwater during potential rain events."*

Response

In this comment, and USEPA's subsequent comment No. 163, USEPA overstates the risks to workers and storm water and appear to be directing the Respondents to alter the evaluation of alternatives to demonstrate that Alternative 2 (MatCon Cap) presents a much greater risk than Alternative 3 (SW Cap) with respect to exposure to landfill gas and soil vapor. USEPA's comments are without basis, as the data necessary to make this conclusion have not been collected. Any risks can be readily addressed through proper work practices and personal protective equipment.

*(n) Correct the following sentence in Section 4.2.2, page 133, last paragraph, "Alternative 2 requires ~~no~~ special techniques, materials, ~~or~~ and labor to construct the MatCon caps and to install the LFG and soil vapor passive vents through MatCon, tie-in the SW Cap HDPE liner with the MatCon Cap, and use special mastic-coated geotextile to seal building foundations and other structures." It cannot be said that there are no special techniques, materials, or labor when response to comment #135 states that tying in the SW Cap HDPE liner is "a proprietary design and details are not published by MatCon", a special mastic coated geotextile is needed, a design density (not common to normal asphalt) is needed, "additives for the asphalt will need to be supplied by MatCon, Inc. rather than obtained locally" (page 134), and "MatCon, Inc. personnel would need to be present during the cap construction" (page 133).*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

48

Reference No. 038443-89

Response

USEPA's requested revision contradicts text from USEPA's 2003 Innovative Technology Evaluation Report, which states "the technology is readily implementable since hot mix plants are available in all parts of the country. Standard, readily available paving equipment can be used." Additionally, USEPA notes that "the ease of implementation is an attractive feature of the MatCon technology. The propriety binder is shipped to the hot mix asphalt plant nearest the site, and the mix is prepared under [MatCon] supervision. Paving equipment available from local paving contractors can be used to install the MatCon cover in a few weeks". It is unclear why USEPA is contradicting its own evaluation; however, it appears that USEPA is trying to justify reducing the perceived implementability of Alternative 2, without basis.

*(o) Remove the following sentence in Section 4.2.2, page 133, last paragraph, "However, the techniques required for the installation of a MatCon cap are not technically challenging or especially onerous." This is not known to be true since details of the SW and MatCon cap tie-in can't be provided due to proprietary reasons. It is not known if installation will be technically challenging or onerous.*

Response

As discussed above, MatCon's own technical discussion indicates that the tie-in between MatCon and a conventional solid waste cap is a simple process and MatCon has agreed to provide USEPA with a typical tie-in detail (after the Respondents asked). Further, USEPA's Technology Evaluation Report notes that the ease of implementation of MatCon is an attractive feature of the technology. Again, it is unclear why USEPA is contradicting its own evaluation; however, it appears that USEPA is trying to justify reducing the perceived implementability of Alternative 2, without basis.

*(p) Explain the amount of O&M assumed for asphalt resurfacing in Section 4.2.2, page 134, second paragraph under Cost heading that states, "The annual cap maintenance costs are primarily for resurfacing the asphalt and vegetation and vermin control, as necessary." CRA's response to comment #180 states that the MatCon Cap will require annual maintenance on small portions of the Site that is assumed to equal the costs of replacement every 30 or 40 years.*

Response

USEPA is incorrectly paraphrasing CRA's response to USEPA Comment No. 180 (CRA, June 17, 2011). USEPA's requested revision requiring assumed amounts of O&M for asphalt resurfacing requires information that extends beyond what is typically required for a FS. CRA provided sufficient information to support USEPA's risk-management decision with respect to which alternative is the most appropriate remedy.





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

49

Reference No. 038443-89

(q) Correct the following sentence in Section 4.2.3, page 135, first bullet, "Construction of cap places a protective ~~would effectively place a barrier between the underlying waste and contaminated fill material and receptors at the surface, thereby eliminating the direct contact exposure.~~

Response

Concur.

(r) Correct the following sentence in Section 4.2.3, page 135, third bullet, "The drainage channels will direct most of the stormwater collected to stormwater retention ponds (i.e., ~~The Large Pond and Small Pond~~), where the water would collect allowing sediments to fall out of suspension.

Response

Concur.

(s) Correct the sentence in Section 4.2.3, page 138, second paragraph, to read, "Given that the Site has not accepted waste since 1996, and that there will be little expected further ~~decomposition of waste material settlement~~, a reduced slope ~~would not~~ is not expected to affect the cap performance.

Response

The sentence as written is correct as it is the decomposition of waste that would that would be the primary driver of differential settlement within the landfill. However, the Respondents have no objection to the suggested change.

(t) Correct the sentence in Section 4.2.3, page 138, first paragraph under the heading Short Term Effectiveness, to read, "Therefore, there will be a short-term reduction in erosion control, specifically due to temporarily reduced soil cover and a temporary increase in ~~erosion runoff~~ due to reduced evapotranspiration over the short-term.

Response

The sentence as written is correct as the increase in runoff will result in increased erosion. However, the Respondents have no objection to the suggested change.

(u) Correct the sentence in Section 4.2.3, page 141, first paragraph, to read "Alternative 3 will also immediately render the Site unusable for the existing businesses, forcing existing businesses to cease operations and to relocate or close permanently.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

50

Reference No. 038443-89

Response

The sentence as written is correct as the businesses will be required to cease operations at the Site and there will be an interruption to the business during the relocation process.

*(v) Correct the sentence in Section 4.2.3, page 141, third paragraph, to read "Additionally with respect to short-term risks to the community, Alternative 3 poses moderate risks to local residents, and employees and patrons of the adjacent businesses (on-Site businesses will be ~~closed~~ relocated and therefore not at risk) during active remediation."*

Response

The USEPA comment presupposes that all of the businesses can be successfully relocated, which is by no means certain.

As USEPA requested, the Respondents included a discussion explaining why implementation of an alternative that forces business relocation is less implementable than an alternative that does not. The costs for industrial land and building space in Dayton that are comparable in size and functionality to current Site usage ranges from approximately \$15 to \$50 per square foot. Listing prices for small commercial/industrial properties including former garage centers of small size to those at the Site are still over \$100,000. Even at the low end of the square footage cost, it is estimated that relocations costs could be over one million dollars, and as high as several million dollars (for land purchase costs alone). Thus, it is not realistic for USEPA to state that business relocation is merely "inconvenient", and to assume that business relocation could occur without adverse effects to the business (including closure).

USEPA Comment No. 150

*Not addressed and unacceptable. CRA mentions that regrading around the businesses will be required, but do not stress the depth or amount of material that requires removal if existing elevations are to be maintained following MatCon placement.*

*(ORIGINAL COMMENT) Section 4.2.2, Alternative 2, MatCon/SW Cap, Page 82, Paragraph 6. CRA needs to mention the short term risks with removing enough surface material, up to 10" depth, around the businesses to get an asphalt cap installed.*

Response

This revised comment implies that RD details are needed during the FS stage. Much of the existing surface material in the area to be covered by the MatCon cap, which is predominantly



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

51

Reference No. 038443-89

asphalt and gravel, may be able to remain in place. The amount of material requiring removal will be determined during RD based on an evaluation of the ability of the existing material to provide adequate support for the MatCon Cap.

With respect to USEPA's original comment, USEPA is directing the Respondents to revise the evaluation to overstate the short-term risks of construction of a MatCon Cap.

USEPA Comment No. 153

*Not addressed and unacceptable. While some of the special requirements of a MatCon Cap were added, CRA still asserts "Alternative 2 requires no special techniques, materials, or labor to construct the caps". Correct the following sentence in Section 4.2.2, page 133, last paragraph, "Alternative 2 requires ~~no~~ special techniques, materials, ~~or~~ and labor to construct the MatCon caps and to install the LFG and soil vapor passive vents through MatCon, tie-in the SW Cap HDPE liner with the MatCon Cap, and use special mastic-coated geotextile to seal building foundations and other structures." It cannot be said that there are no special techniques, materials, or labor when CRA's response to Comment 135 states that tying in the SW Cap HDPE liner is "a proprietary design and details are not published by MatCon", a special mastic coated geotextile is needed, a design density (not common to normal asphalt) is needed, "additives for the asphalt will need to be supplied by MatCon, Inc. rather than obtained locally" (page 134), and "MatCon, Inc. personnel would need to be present during the cap construction" (page 133).*

*(ORIGINAL COMMENT) Section 4.2.2, Alternative 2, MatCon/SW Cap, Page 83, Paragraph 3. The statement that Alternative 2 requires no special techniques, materials, or labor to construct the caps does not seem valid when talking about the MatCon cap.*

*Include information on the special compaction, material, and labor for a MatCon cap.*

Response

USEPA's comment directs the Respondents to revise the evaluation to indicate that a MatCon Cap requires special techniques to implement. As noted above, USEPA's requested revision contradicts text from USEPA's 2003 Innovative Technology Evaluation Report, which states "the technology is readily implementable since hot mix plants are available in all parts of the country. Standard, readily available paving equipment can be used." Additionally, USEPA notes "the ease of implementation is an attractive feature of the MatCon technology" Although a small portion of the materials (binder additive) and labor (for aspects of the design and inspection) must be sole-sourced, these are not factors that would restrict or inhibit the ability to construct and maintain a remedy using this approach. MatCon is a binding agent (which



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

52

Reference No. 038443-89

provides a longer lifespan than conventional asphalt) and is added to hot mix asphalt prior to use. Given the Site's proximity to an asphalt plant (Valley Asphalt), it is realistic to believe that the Site will have ready access to the technology. The Respondents revised the text of the OU1 RI/FS to clearly state the additional requirements of constructing a MatCon Cap; however, the Respondents maintain that these additional requirements do not present significant additional risks or difficulties in implementation.

USEPA Comment No. 155

*Addressed as directed. Note: The comment originally addressed the fact that Alternative 3 had this language while Alternative 2 did not, in the current document the sentences in both sections seem to be out of place.*

*(ORIGINAL COMMENT) MatCon/SW Cap, Page 83, Cost, Paragraph 1: Add "Additionally, the Small and Large Ponds would need to be backfilled to grade (with clean fill for materials that would be in contact with the water table), prior to implementing any remedy."*

Response

Original comment addressed. The Respondents added the text from USEPA's original Comment No. 155 into the OU1 RI/FS report, as requested.

USEPA Comment No. 163

*Not addressed and unacceptable. The last sentence in Section 4.3.1 on page 148 still states "Alternatives 2 and 3 provide a similar level of overall protection of human health and the environment." The fact that Alternative 3 will have no permanent on-site receptors make control of LFG and soil vapor much more protective of human health. See next comment for additional details.*

*(ORIGINAL COMMENT) Section 4.3.2, Overall Protection of Human Health and the Environment, Page 87 to 88. This assessment considers direct contact exposure as the relevant exposure pathway. Revise the assessment to include exposure to LFG and indoor air, not just landfill materials, to the on-site businesses, since these risks widely vary between alternatives. Overall protection of human health and the environment must also be revised to discuss all relevant pathways (i.e., risks to groundwater, the adjacent recreational area, GMR and Quarry Pond surface water and sediment). See Comment 147.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

53

Reference No. 038443-89

### Response

The Respondents recognize that, if the businesses are moved, there will no longer be receptors on Site. The VI Study has not yet been completed, nor have the necessary pre-design studies to confirm the risk. Based on available data, there is no significant VOC contamination in shallow soil (0 to 2 feet below ground surface). The assertion that Alternative 3 would be "much more protective" is not defensible. As noted by USEPA during the August 24, 2011 meeting, the proposed alternatives are either protective or not protective. There is sufficient precedent showing that re-use of Superfund Sites, including commercial use, can be safely accomplished with readily available engineering controls.

### USEPA Comment No. 164[1]

*Addressed with additional text unacceptable.*

*(ORIGINAL COMMENT) Page 87, Overall Protection of Human Health and the Environment. The statement "Alternatives 2 and 3 provide a similar level of overall protection of human health and the environment" needs to be revised based on LFG and indoor air impacts to on-site businesses that will remain under Alternative 2. What will be done to make sure current and potential future receptors are thoroughly protected (in detail)?*

### Response

Original comment addressed as directed. In the comments below, USEPA overstates the risk and appears to wish to demonstrate that Alternative 2 (MatCon Cap) presents a much greater risk than Alternative 3 (SW Cap), primarily, with respect to exposure to landfill gas and soil vapor. The Respondents have provided specific responses to USEPA's new comments below.

*(a) The second paragraph in Section 4.3.1 reads, "Alternative 1 (no action) has the lowest degree of long-term effectiveness and permanence." Section 4.3.3 should address long-term effectiveness and permanence. Correct this section so that is only discussing overall protection of human health and the environment.*

### Response

Concur.

*(b) The second column in all the Tables in Section 4.3.1 are titled Long-Term Effectiveness and Performance – Direct Contact, change them to Overall Protection of Human Health and the*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

54

Reference No. 038443-89

*Environment. Also change all the comments in the tables to deal with overall protection of human health and the environment instead of long-term effectiveness and performance [permanence].*

Response

Concur.

*(c) Section 4.3.1, page 146, first table, has the rating for alternatives 2 and 3 as equal. Change the Ratings in the Table for LFG and soil vapor control to low for alternative 2 and medium for Alternative 3. The fact that Alternative 3 will have no permanent on-site receptors make control of LFG and soil vapor much more protective of human health.*

Response

Please see response to Comment No. 163, above.

*(d) The text associated with this table also states, "Sub-slab soil vapor will be vented from beneath the buildings to the atmosphere through active venting systems." The rest of the document states that active versus passive vented will be evaluated in the VI study. Please make this consistent with other sections.*

Response

Concur.

*(e) Section 4.3.1, page 145, first table, based on the statement "At present, neither Alternative 2 nor Alternative 3 addresses this RAO." Change the Long-Term Effectiveness and Performance – Direct Contact Ratings in the Table for hot spot remediation to low for all alternatives.*

Response

As provisions are included under both Alternatives 2 and 3 for addressing hot spots identified during RD, the basis for USEPA's comment is unclear.

*(f) Section 4.3.1, page 146, third table, based on the fact that the contaminated wetland areas are not removed or treated, change the ratings in the Table for hot spot remediation to medium for Alternatives 2 and 3.*

Response

The Respondents assume that USEPA intended the comment to refer to the table for wetlands and the reference to hot spots was merely an error.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

55

Reference No. 038443-89

USEPA presupposes that the Large and Small Ponds are in fact wetlands and that they are contaminated, neither of which has been demonstrated to date. The overall protection to human health and the environment afforded through capping of the Large and Small Pond areas is high. If the Large and Small Ponds are deemed to be wetlands, additional offset wetlands would be required to compensate for the loss of any wetland habitat. Therefore, the basis for USEPA's comment is unclear.

*(g) Section 4.3.1, page 147, first table, based on the fact that Valley Asphalt would no longer be located on the site under Alternative 3, change the table to reflect the rating for Alternative 3 to high and delete the Comment "Monitoring to ensure that Valley Asphalt personnel are not exposed to contaminants."*

Response

Concur.

USEPA Comment No. 164[2]

*Addressed with additional text unacceptable.*

*(ORIGINAL COMMENT) Page 90, Table of Long Term Effectiveness: See Comment 147. This section and table will need to be re-written and re-evaluated.*

Response

The original comment addressed as directed. In the comments below, USEPA overstates the risk and appears to wish to demonstrate that Alternative 2 (MatCon Cap) presents a much greater risk than Alternative 3 (SW Cap) with respect to exposure to landfill gas and soil vapor. The Respondents have not yet completed the VI Study or the necessary landfill gas pre-design study to confirm the risks from exposure to soil vapor and landfill gas. The Respondents have provided specific responses to USEPA's new comments below.

*(a) Section 4.3.2 has the following introduction, change it to "For the purpose of this comparison, alternatives that require ~~no only~~ variances/waivers are assigned a rating of "High", whereas alternatives that require ~~few~~ variances/ARAR waivers that would likely be granted (e.g., only slope reduction) are assigned a "ModerateMedium" rating, and alternatives that do not comply with ARARs or require more variances/waivers that are unlikely to be attained are assigned a "Low" rating." Change the text from Moderate to Medium, or vice-versa, to match the rest of Section 4.0. The MatCon cap, Alt. 2, was incorrectly rated High even under the original text where it should have been medium along with Alt 3. The two alternatives should not be rated*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

56

Reference No. 038443-89

*equally since there is a huge difference between them as shown in the following text from this section, "Assuming substantive requirements for a grade variance are met during remedial design, Alternative 3 complies with ARARs. Assuming substantive requirements for obtaining a grade variance are met during remedial design, Alternative 2 would still require three NCP waivers to implement the MatCon Cap design." Change the rating for Alternative 2 to Medium and leave the rating for Alternative 3 at High.*

Response

The statement that there is "a huge difference" between Alternatives 2 and 3 is an exaggeration given the nature of the waivers required and the stated willingness of USEPA and Ohio EPA to work with the Respondents to obtain the waivers. However, the Respondents do not object to the proposed change.

*(b) Section 4.3.3, page 151, paragraph 2, refers to the MatCon cap and states "As the surface can be inspected regularly, cracks and other deficiencies can be identified sooner than in if a SW Cap had been used." The text on page 107 stated "Additional contingency measures may include increased thickness in some areas, or to cover the MatCon cap with a layer of conventional asphalt, for example in high traffic areas on the Valley Asphalt property." If conventional asphalt is placed on top of the MatCon cap, then inspections of the MatCon surface cannot be performed.*

Response

The details requested by USEPA in the new comment are more appropriate for RD and appear to be intended to decrease the perceived implementability of the MatCon cap.

Please see the response to Comment No. 132.

*(c) Section 4.3.3, the inspection and maintenance of the building venting systems under Alt. 2 is not addressed. Regular inspections of building floors for developing cracks, regular indoor air monitoring, maintenance of and response to gas alarms, and other factors required for maintaining a sub-slab venting system are a huge undertaking that is omitted from discussion. The same is true for the LFG monitoring requirements for Alts. 2 and 3.*

Response

Inspections of building floors, regular indoor air monitoring, etc. are not "a huge undertaking", as stated in this comment. The routine monitoring required would be detailed as part of an operations and maintenance plan and do not represent a significant effort to complete. The monitoring and maintenance required under both alternatives are similar.





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

57

Reference No. 038443-89

CRA has submitted a revised VI Investigation Work Plan to USEPA in order to determine the current risks associated with soil vapor. USEPA has not issued any comments on the content of the revised VI Investigation Work Plan. The need for a sub-slab venting system has not been established. Should building venting systems be required, based on the results of the VI Investigation, details on building conditions and venting system inspection and maintenance will be included as part of the RD process.

*(d) Section 4.3.3, page 151, second paragraph, remove the sentence, "Therefore, the thickness of the barrier is irrelevant."*

#### Response

The sentence is correct as written. As the MatCon and solid waste caps offer the same protection against direct contact with waste material and an equivalent reduction in infiltration, the relative thicknesses of the barriers are indeed irrelevant.

*(e) Section 4.3.3, page 151, third paragraph, the description of the rating system seems to be dealing only with residual risk (based on magnitude of residual waste [waste left behind]), and not including the adequacy and reliability of the controls (cap, LFG vents, sub-slab venting systems). Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA describes the assessment of adequacy and reliability of the controls as:*

*This factor assesses the adequacy and suitability of controls, if any, that are used to manage treatment residuals or untreated wastes that remain at the site. It may include an assessment of containment systems and institutional controls to determine if they are sufficient to ensure that any exposure to human and environmental receptors is within protective levels. This factor also addresses the long-term reliability of management controls for providing continued protection from residuals. It includes the assessment of the potential need to replace technical components of the alternative, such as a cap, a slurry wall, or a treatment system; and the potential exposure pathway and the risks posed should the remedial action need replacement.*

*Change this portion of the paragraph to read, "For the purpose of this comparison, alternatives that would prevent exposure to the fill and waste and that have adequate and reliable controls regardless of contaminant levels are assigned a "High" rating, whereas alternatives that can only minimize would prevent exposure to more potentially contaminated waste and minimize exposure to inert waste or have inadequate and unreliable controls are assigned a "ModerateMedium" rating, and alternatives that do not minimize exposure to wastes and have inadequate and unreliable controls are assigned a "Low" rating."*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

58

Reference No. 038443-89

Response

The Respondents do not object to the requested changes.

*(f) The second column in all the Tables in Section 4.3.3 are titled Long-Term Effectiveness and Performance – Direct Contact, change them to Long-Term Effectiveness and Permanence.*

Response

Concur.

*(g) In Section 4.3.3, the table rates the cap component of OU1 only and not other components of OU1 such as the LFG vents and sub-slab venting systems. Change the ratings to assess all control components of OU1. Alt. 1 should be rated Low, Alt. 2 should be rated Medium due to sub-slab venting system maintenance and potential for failure of system components or cracks in floors, buildings located on the cap, workers on the cap, etc., and Alt. 3 should be rated High since only the cap and LFG vents are present and engineering controls will prevent entry onto the site and near LFG vents, etc.*

Response

As noted previously, the requested revisions overstate the risks associated with Alternative 2 and appear intended to reduce the overall rating of Alternative 2 with respect to Alternative 3.

*(h) Section 4.3.3, page 151, last paragraph, reads, "Both Alternative 2 and Alternative 3 would employ cap designs rated "High". As both Alternative 2 and Alternative 3 would employ similar institutional controls, engineering controls, and monitoring program, they are both similar in this regard. Therefore, with respect to addressing RAOs with respect to Site COCs, both active remedial alternatives are comparable and offer a high degree of protection with respect to the long-term effectiveness." Change the paragraph since both caps are not rated high. While both caps contain the same residual waste, one cap has buildings and workers located on its surface that puts workers in closer proximity to LFG and sub-slab vent emissions. A crack in the asphalt cap or building floor puts employees and customers in potential contact with emissions. Under Alt. 2 the cap is not the only control being rated. The building foundations and floors are also part of the remedy controls. The Respondents did not design the structures, had no control of the construction QA/QC as they were being built, do not know what compaction readings were when they were built, do not know what concrete mix designs were used, can't verify all slab thicknesses, can't locate plans or construction notes for many of the structures, and may not know the location of all in-use or abandoned utility (public and private) entrances. Since most details of this important control feature are only being assumed, it cannot be rated High.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

59

Reference No. 038443-89

Response

The comment appears to overstate the risk of Alternative 2 while downplaying the risks and difficulties associated with the implementation of Alternative 3. As is stated above, the technical information needed to make the conclusions in this comment will be collected during RD.

USEPA Comment No. 165

*Addressed with additional text unacceptable.*

*(ORIGINAL COMMENT) Page 92, First Table: See Comment 147. This section and table will need to be re-written and re-evaluated.*

Response

Original comment addressed as directed. The comments below appear to overstate the risk of Alternative 2 (MatCon Cap) while downplaying the risks and difficulties associated with the implementation of Alternative 3. As is stated above, the technical information needed to make the conclusions in these comments will be collected during RD. The Respondents have provided specific responses to USEPA's new comments below.

*(a) Section 4.3.4, first paragraph: Remove the sentence "Rather, construction of a cap will restrict exposure to potential receptors" and replace it with what should be evaluated in this section "Rather, construction of a cap will limit mobility of waste and contaminated soil."*

Response

The sentence is correct as written as it refers to the discussion in the previous sentence regarding the inability of the remedial alternatives to reduce the toxicity and volume of the waste and contaminated material. However, the Respondents have no objection to the requested change.

*(b) Section 4.3.4, second paragraph: Not addressing LFG by saying, "As the need for active or passive venting systems has not yet been confirmed, a comparative analysis cannot be completed at this time" is unacceptable. Although by the end of the paragraph the systems [sic] are assumed to be the same and are being compared, "Therefore, for comparative purposes, it is assumed that Alternative 2 and Alternative 3 would employ similar LFG venting systems." Whether a system is active or passive the goals are known – to prevent migration off site, to reduce concentrations in onsite buildings, etc. Include a discussion based on RAOs (i.e., preventing it from going off site and into buildings).*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

60

Reference No. 038443-89

Response

The Respondents have no objection to the requested change.

*(c) Section 4.3.4, third paragraph: Hot spots are not adequately addressed within this section. The following sentence requires edits, "Further investigation is still required to either confirm that the small volumes of principal threat waste will not jeopardize the overall remedy, or, if they are deemed to be hot spots, to determine the appropriate response." First, delete the word "small" since an investigation has not been completed to determine this, and second, principal waste threats are hot spots.*

Response

The Respondents do not object to the requested wording change.

*(d) Section 4.3.4, third paragraph: The text is not addressing hot spots with respect to OU1 without considering impacts on OU2 when it states, "As the hot spots will be adequately addressed (either through containment or through direct treatment), there is little risk of future exposure." Discuss how hot spot removal will affect, positively or negatively, options for achieving RAOs under OU2.*

Response

The Respondents assume that USEPA's comment was intended to read "The text is not addressing hot spots with respect to OU1 without considering impacts on OU2". As the exact nature of any hot spots is not yet known, only a conceptual discussion of how hot spot removal will affect options for achieving RAOs under OU2 is possible now.

*(e) Section 4.3.4, address soil vapor in this section.*

Response

The Respondents do not object to the requested additional discussion.

*(f) Section 4.3.4, third paragraph, delete the EPA 1991 quote at the end of the paragraph.*

Response

The USEPA's rationale for deleting its own guidance is unclear.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

61

Reference No. 038443-89

USEPA Comment No. 166

*Addressed as directed. See Comment 165 concerning re-write.*

*(ORIGINAL COMMENT) Page 92, Paragraph 1. See Comment 147. This section will need to be re-written and re-evaluated. However, the statement that Alternative 1 (no action) would not reduce volume of LFG is not accurate. The volume of LFG is reduced the same way it is under current Alternatives 2 and 3 except it vents through an unknown path of least resistance instead of the LFG gas network installed with the cap.*

Response

Original comment addressed as directed. New comment is not specific and no additional response is required.

USEPA Comment No. 168

*Addressed with additional text unacceptable.*

*(ORIGINAL COMMENT) Page 93, Paragraph 3. The statement "Technically, Alternative 2 and 3 can both be implemented within similar time frames, i.e., approximately 3 years" seems to be inconsistent with the earlier statement that Alternative 2 could be up to an entire year less (33%) to construct.*

Response

Original comment addressed. The thrust of USEPA's new comments appears to be to reduce the overall rating of Alternative 2 while increasing the overall rating of Alternative 3. The Respondents have provided specific responses to USEPA's new comments below.

*(a) Section 4.3.5, states, "Alternative 3 entails greater disturbance of the waste and contaminated soils and fill material, as more fill material significant grading will be required to achieve a 3 percent slope across the entire Site." Alternative 3 should not disturb waste unless consolidation is planned. Alternative 2 will disturb more soil, waste and fill since the areas around the buildings will need to be lowered to install the MatCon cap.*

Response

Given the existing topography of the Site, Alternative 3 will require greater disturbance of the waste and contaminated soil in order to achieve the required 3 percent slope across the entire Site. The Respondents do not expect that consolidation of waste materials from outside the



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

62

Reference No. 038443-89

limits of the cap will be required; however, significant recontouring of the waste and contaminated soil already present within the proposed footprint of the cap will be required due to the existing topography. For example, in order to achieve the required slope, material from the embankments and northern and eastern portions of OU1 will likely need to be pushed toward the center of the Site. The exact details regarding the necessary regrading would be determined through a "cut and fill" balance completed as part of RD.

*(b) The document does not discuss consolidation under each alternative. The only two places consolidation is mentioned in the main text is Section 2.4.2.1, page 88, "Any non-hazardous waste materials that need to be moved during cap construction will be consolidated within the cap area. Any hazardous waste materials that are removed during cap construction will be properly characterized and disposed off Site at an appropriately licensed location" and in Section 5.0, Summary, page 159, "Removal of surficial waste materials and off-Site disposal or on-Site consolidation." Add more details on proposed consolidation under each alternative.*

#### Response

As noted in the response above, the exact details regarding the necessary regrading would be determined through a "cut and fill" balance as part of RD. As such, additional detail regarding the amount of consolidation required under each alternative is not possible now. Any consolidation required would be similar for both Alternatives 2 and 3 and, therefore, the details regarding consolidation are not necessary for a comparison of the alternatives.

*(c) Section 4.3.5, states, "Alternative 3 poses low equal moderate risks to residents at on and off-Site locations, and high risks to employees and owners of the active businesses along Dryden Road and Valley Asphalt, as these businesses will be forced to close or relocate." If businesses are relocated then there can be no risk to the employees and owners. There might be inconvenience [sic], but that is not one of the analysis factors evaluated under short-term effectiveness. Analysis factors under short-term effectiveness are protection of community during remedial actions, protection of workers during remedial actions, environmental impacts, and time until remedial response objectives are achieved (EPA 1991).*

#### Response

The Respondents concur that relocation of the businesses is not a short-term risk. However, the Respondents disagree with the description of the business relocation as a mere "inconvenience". The assessment of the implementability of Alternative 3 should include a discussion of the difficulties of relocating the businesses. Please refer to the response to Comment No. 147(v). As agreed during the August 24, 2011 meeting, relocation of the businesses has a direct impact on the implementability of Alternative 3 and should be discussed in this section.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

63

Reference No. 038443-89

*(d) Section 4.3.5, the table should show Alt. 1 with a rating of medium and comment "Relies on existing conditions. No risks from remedial actions but remedial response objectives will not be achieved." Alt. 2 will have a rating of medium with comment "Community risk during remedial actions, with considerable risk to onsite businesses. Remedial response objectives will be achieved following construction." Alt. 3 will have a rating of high with comment "Low community risk during remedial actions, since no onsite businesses. Remedial response objectives will be achieved following construction."*

Response

The USEPA's use of the terms "considerable" and "low" to describe the relative risks associated with Alternatives 2 and 3, respectively, exaggerates the differences between the two alternatives. The risks to employees of on-Site businesses are moderate and readily managed and the community risk should be described as "low" for both alternatives.

*(e) Section 4.3.5, paragraph 3, page 154, first sentence is incorrect, "Alternative 2 offers the highest degree of short-term effectiveness with the lowest short-term risks. This is due mainly to the fact that active businesses can remain operational during implementation of the remedy." The fact that the businesses are open during remedial activities puts their workers at the highest risk, the lowest risk comes from the relocation of businesses. The term "risk" is being used incorrectly throughout this section.*

Response

Concur.

*(f) Section 4.3.5 needs to be re-written.*

Response

The comment is vague and no response is possible.

USEPA Comment No. 169

*Addressed with additional text unacceptable.*

*(ORIGINAL COMMENT) Page 93, Last Paragraph. Explain why alternatives that will force existing businesses to close and relocate are assigned a "Low" implementability rating. Although this is not what Moraine and existing property owners and businesses want, it seems that the relocation of a business is not beyond being implementable. Please discuss.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

64

Reference No. 038443-89

Response

The original comment was addressed. USEPA's new comments request a level of detail commensurate with the RD process and beyond that typically required in a FS. The thrust of USEPA's new comments appears to be to reduce the overall rating of Alternative 2 while increasing the overall rating of Alternative 3. The Respondents have provided specific responses to USEPA's new comments below.

*(a1) Section 4.3.6, paragraph 1 states, "Construction of the SW Cap for Alternative 3 will require the closure and, where possible, relocation of the active businesses. In addition, the construction of a cap will require the importation of significant quantities of non-native soil material by truck, which will impact the local community and both on and off-Site businesses." To verify this statement, compare the number of vehicles from Valley Asphalt and the other relocated businesses per day with the number of trucks providing fill material per day.*

Response

This comment requires detail significantly beyond what is reasonable for a FS. The statement that the construction of a solid waste cap will require the importation of significant quantities of fill is neither unreasonable nor an exaggeration.

At the August 24, 2011 meeting, Respondents, USEPA, and its consultants discussed the level of detail required by the August 8, 2011 comments. USEPA and its consultants indicated the level of detail, as understood by the Respondents, was not required, contrary to the written comments.

*(a2) Show suspected haul routes and the routes taken by local residents to see if they intersect.*

Response

This comment requires detail significantly beyond what is reasonable for a FS.

*(a3) Under Alt. 3 truck traffic will no longer affect relocated businesses.*

Response

The comment assumes that relocated businesses will not be present in the area of the Site. Presumably, many of the businesses would prefer to remain in relatively close proximity to their existing locations in order to minimize disruption to their customer base.





**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

65

Reference No. 038443-89

*(b) Section 4.3.6, page 156, paragraph 2 states "Alternative 2 is the most implementable alternative, as only a MatCon asphalt cover is required for existing businesses." The relocation of businesses does not automatically make Alt. 3 less implementable than Alt. 2 since the analysis should not be relying on a single criteria [sic] (relocation) for making this determination.*

Response

The analysis does not rely on a single criterion to make the determination; rather relocation of the businesses is the single largest difference with respect to the implementability of the two alternatives. To describe the relocation of the businesses as merely inconvenient, as USEPA has done in Comment 168 (c) and 169 (c), significantly understates the challenges associated with finding an appropriate site and premises (or constructing new premises) and moving the businesses themselves with minimal disruption.

*(c) The statement "Alternative 3 would require the relocation ~~closure~~ of all of the active businesses within OU1 and will, therefore, be more difficult to implement. Although not technically infeasible, requiring a business to close and relocate places a significant burden on the business, due in part to the difficulty in finding/constructing a suitable site in a suitable location, lost operating time (during relocation), potential loss of clients/customers who are unaware of the business relocation, and the inconvenience to the business operators who would be forced to relocate." The last sentence above was added to address comment #169; it does not give any reason to justify a low implementability rating other than saying that moving is inconvenient. This should be moved to the cost section, it would seem to fit there better since it is assumed that the Respondents would reimburse for much of this expense and it has more impact on cost than implementability. Relocation falls under direct capital costs.*

Response

Please refer to the previous response. As agreed during the August 24, 2011 meeting, relocation of the businesses has a direct impact on the implementability of Alternative 3 and should be discussed in this section.

*(d) Section 4.3.6, coordination with OU2 is not addressed. EPA 1991, specifically states that the ease of undertaking additional remedial action must be considered, including "a discussion of what, if any, future remedial actions may need to be undertaken and how difficult it would be to implement such additional actions. This is particularly applicable for an FS addressing an interim action at a site where additional operable units may be analyzed at a later time." Address how OU1 and OU2 will be coordinated.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

66

Reference No. 038443-89

Response

The Respondents do not believe that there will be significant impediments to the implementation of remedial actions for OU2. The OU2 RI/FS is expected to proceed concurrently with the OU1 RD process, which should serve to minimize additional disruption following completion of the OU1 RA while providing additional data that will be useful during OU1 RD.

*(e) Section 4.3.6 states "MatCon personnel would need to be present during the cap construction for installation." Provide some verification that specialists necessary to repair and maintain the MatCon cap will also be available in 30+ years. In light of the company having been sold/purchased several times, discuss who owns the patents, how have the patents been handled, how is the manufacturing supply stream maintained, what other factors may make service personnel or materials scarce?*

Response

The requested detail is significantly beyond that reasonable for a FS. As noted in the USEPA Technology Evaluation Report, the MatCon technology is readily implementable. There is no reason to expect that similar or better paving technologies will not be readily available in 30 years time should MatCon cease to exist. Furthermore, the MatCon patent will expire and the technology will be in the public domain long before the 30-year time horizon in the comment. The Respondents note that USEPA is not requiring the same level of detail for the liner material for Alternative 3.

*(f) Section 4.3.6 needs to be re-written taking into account: Technical Feasibility (ability to construct and operate technology; reliability of technology; ease of undertaking additional remedial action, if necessary; and monitoring considerations), Administrative Feasibility (coordination with other agencies), Availability of Services and Materials (availability of treatment, storage capacity, and disposal services; availability of necessary equipment and specialists; and availability of prospective technologies).*

Response

Please see previous responses. As noted above, USEPA's 2003 Innovative Technology Evaluation Report states "the technology is readily implementable since hot mix plants are available in all parts of the country. Standard, readily available paving equipment can be used." Additionally, USEPA notes that "the ease of implementation is an attractive feature of the MatCon technology."



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

67

Reference No. 038443-89

USEPA Comment No. 170

*Not addressed and unacceptable.*

*Section 4.3.6, page 156, paragraph 1 states "Therefore, comprehensive remedial alternatives analyzed in Alternatives 2 and 3 require no special techniques, materials, or labor to construct, and thus major technical, administrative, or schedule difficulties are not expected." Just because Alternative 2 is implementable, that does not mean it requires no special techniques, materials, or labor to construct. The techniques, materials, and oversight personnel are unique and it should be stated thus. Change this.*

*(ORIGINAL COMMENT) Page 94, Paragraph 3: See earlier comment on the statement that Alternative 2 requires "no special techniques, materials, or labor to construct"*

Response

Please see the responses to previous responses.

USEPA Comment No. 176

*Not addressed and unacceptable. The table was re-titled "Summary of Required ARAR Waivers" and the variance was not included; re-title as "Summary of Required ARAR Waivers/Variances" and add the slope variance.*

*(ORIGINAL COMMENT) Table 3.2, Summary of Required ARAR Variances: The table does not list the variance for the SW cap slope.*

Response

Table 3.2 was revised as per the discussions between USEPA, Ohio EPA, and the Respondents during the March and April 2011 conference calls. However, the Respondents do not object to the proposed change.

USEPA Comment No. 179

*Not addressed and unacceptable.*

*Table 4.1, Estimated Remedial Costs. It is not understood how the cost for vegetation control, groundwater sampling, leachate, soil vapor, and LFG monitoring, and general Site maintenance is more under Alternative 3 than Alternative 2. Alternative 2 includes monitoring of indoor air at the businesses*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

68

Reference No. 038443-89

*and additional LFG monitoring and maintenance of gas alarms, which Alternative 3 does not. It is not understood how vegetation control differs under O&M and cap maintenance. Please revise.*

*(a) Table 4-1 assumes 2% of capital costs for O&M under Alt. 2 and 3. This needs to take into account the differences in monitoring under Alt. 2 due to businesses remaining on site.*

Response

The Respondents have no objection to the requested change.

*(b) Appendix H: Table H-1: Equipment mobilization costs are not listed. Equipment storage and office trailer costs are not listed.*

Response

USEPA's minor comments regarding cost estimates and Site costs will not impact the decision making on remedy selection.

*(c) Table H-2: Only 5 cubic yards of shrub material is listed as needing mulched. Based on the site being 26 acres in size and the text on page 38 (referring to earlier clearing) stating "Vegetation at the Site has since substantially regrown" this number should be adjusted upward.*

Response

The Respondents have no objection to the requested change.

*(d) Table H-3: Details on the MatCon cap are not listed, the cost is assumed to include the gravel base and the 4" MatCon layer. The text on page 107 stated "Additional contingency measures may include increased thickness in some areas, or to cover the MatCon cap with a layer of conventional asphalt, for example in high traffic areas on the Valley Asphalt property." It is unlikely that increased thicknesses were taken into account when generating costs. If a conventional asphalt is placed on top, then inspections of the MatCon surface will need to be addressed.*

Response

The thickness of the fill used in capping, and the need to implement contingency measures is a detail more appropriate for the RD.

Please see the response to Comment No. 132, above.

*(e) Table H-4: Add the cost of LFG alarms and additional monitoring for the onsite businesses for Alt. 2.*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

69

Reference No. 038443-89

Response

The quantity and location of LFG alarms and additional monitoring will be determined during RD when final details regarding the cap extent and distance to receptors are known.

USEPA's minor comments regarding cost estimates and Site costs will not impact the remedy selection decision.

*(f) Table H-6: The removal of 12 inches or greater of material to allow for MatCon installation was not included in this cost. Add this cost for Drainage Cut to Table H-6.*

Response

USEPA states in Comment No. 150 that 10 inches of material will require removal but states in the above comment that 12 inches of material will require removal.

Please see response to Comment No. 150.

*g) Table H-6: Grading for the MatCon cap around buildings, Dryden Road, and utilities, with removal of existing asphalt or concrete is listed at \$4,000 per acre but grading for the SW cap is listed at \$6,000 per acre. Explain the difference in cost and how grading for the MatCon cap can be less when consolidation will be occurring.*

Response

USEPA's minor comments regarding cost estimates and Site costs will not impact the remedy selection decision.

*(h) Table H-7: The cost for annual resurfacing of MatCon appears low based on EPA/540/R-03/505 (July 2003) listed "the cost of the binder per acre of cover is \$77,400 (current published catalog pricing), and the cost of aggregate and bitumen per acre ranges from \$3,000 to \$10,000, depending on the local cost of aggregate." Thus 2003 cost of \$80,400 to \$87,400 per acre is for materials only. The cost does not include the cost to remove an old section of asphalt, regrade the subbase, labor and equipment costs to lay the base, etc. Adjust the cost upward to reflect these costs.*

Response

The Respondents do not anticipate that the MatCon Cap will require a full resurfacing annually. Rather, Respondents anticipate minor maintenance and patching may be required, and have prepared cost estimates accordingly.



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

70

Reference No. 038443-89

USEPA Comment No. 181

*CRA's Response to Comments indicates this information has been provided but it is not clear where and this information still could not be found in the RI/FS.*

*(ORIGINAL COMMENT) Tables. Please include a table showing CRA's hazardous waste analysis results for CRA's TCLP and other waste characterization sampling, and the Valley Asphalt data results (TCLP and regular analysis). This data could not be found in Table 1.4, Soil Sampling Analytical Results.*

Response

Analytical results for Valley Asphalt soil samples (i.e., TP5, TP6, TT-7, TT-21, and TT-22) are specified as Northern Parcel locations, and were included in Table 1.5 entitled Soil Sampling Analytical Results.

The Respondents provided the analytical data for TCLP and other waste characterization sampling and analyses to USEPA via the FTP site on August 29, 2011, under a zipped folder titled "Streamlined OU1 RIFS Additional Information".

USEPA Comment No. 183

*Not addressed as directed. The note is included on Figure 1.2, but the area is not shown, nor is this included as a data gap or discussed in the FS.*

*(ORIGINAL COMMENT) Figures. There is no topographic map. Please include the topographic map showing OU1 in Figure 1 of the Dispute Resolution Agreement as a Figure, and show the area north of the recreational trail that will be investigated during remedial design to determine if this area contains solid waste and will be included under the OU1 cap. This investigation and area should also be discussed as a data gap, as the media to be addressed, and in capping alternatives discussions.*

Response

Please see the response to USEPA Comment No. 99.

USEPA Comment No. 186

*Addressed as directed but new issue. Appendix G states that the vegetative surface layers were modeled*



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 29, 2011

71

Reference No. 038443-89

*as "Vegetation (i.e., ground cover): "Good Stand of Grass" for existing conditions (Alternative No. 1) and SW Cap (Alternative No. 2 and No. 3) [not applicable to the MatCon Cap (Alternative No. 2)]." Table 1 in Appendix G shows the MatCon cap was modeled with a 6 inch vegetative layer at 3.1X10<sup>-3</sup> cm/s. This is incorrect, please revise.*

*(ORIGINAL COMMENT) HELP Model, General. A waiver from the requirement for a 5% slope for a solid waste cap and 1.5% slope on an asphalt cap has been mentioned in the text; however, the HELP model does not show all of these scenarios. The HELP model should run calculations on all scenarios (see previous comments) and present these findings in the text. Please address, and see additional comments in Attachment 2.*

Response

The line item in Table 1 of Appendix G represents either "Vegetated Layer" or "Protective Layer". The MatCon cap was modeled with a 6 inch protective layer with a hydraulic conductivity of  $3.1 \times 10^{-3}$  cm/s beneath the 2 inch Asphalt Base Course, and the 2-inch Asphalt Surface Course. The protective layer is a grading layer or protective cover that provides a granular base for the asphalt. The USEPA comment is incorrect, and no revision is required.

Should you have any questions on the above, please contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Stephen M. Quigley

VC/ca/114

Encl.

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